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THE CORPORATION OF THE CITY OF HAMILTON

CAPITAL CHARGES STUDY

DECEMBER 1, 1989

The
Coopers
& Lybrand
Consulting Group

THE CORPORATION OF THE CITY OF HAMILTON

CAPITAL CHARGES STUDY

DECEMBER 1, 1989

Submitted to: Mr. Ed Matthews
City Treasurer

Submitted by: B. Wolfman
V. Todorovski

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THE CORPORATION OF THE CITY OF HAMILTON

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SUMMARY OF FINDINGS AND RECOMMENDATIONS

This summary sets out the findings and recommendations arising from our detailed evaluation of the City of Hamilton's capital contribution requirements. The key points below, when implemented, will ensure that the cost of providing future capital facilities to serve new development does not adversely affect current tax payers.

- * Recommended residential development charges are as follows:

	<u>Per Unit</u>
- Single family, semi-detached, and row dwellings	\$2,872.00
- Apartments of two bedrooms or more	2,027.30
- Bachelor and one-bedroom apartments	1,098.12

- * The foregoing levies have been based on the following capital costs that will be incurred by each City Department, to service residential development:

	<u>Per Capita</u>
- Culture and Recreation	\$273.54
- Public Works - Parks Division	149.37
- Public Library	103.58
- Fire Department	84.32
- Engineering	227.51
- Traffic Department	<u>6.39</u>
Total Per Capita Cost	\$ <u>844.71</u>

In each case, the existing service levels have been used, to ensure compliance with the Development Charges Act, the legislation passed in November, 1989 governing the recovery of municipal and educational capital costs. This also ensures that new residents pay only a proportionate share for those new facilities which their development will require. In addition, the foregoing figures reflect a \$20.25

per capita credit for debt, which the new residents are expected to support directly through their annual tax bill. All capital subsidies which are expected from senior levels of government have also been credited before arriving at the per capita capital costs.

- * The above mentioned per capita costs have been converted to the recommended capital contribution charges for each type of unit by using the following average occupancy rates:

	<u>Persons Per Unit</u>
* single family, semi-detached, and row dwellings	3.4
* units of two bedrooms or more	2.4
* bachelor and one-bedroom units	1.3

For purposes of the levy, we recommend that any rooms not clearly designed as kitchen, living, dining or bathroom areas be considered as bedrooms, as they allow for the use of an additional person in an apartment unit, even though such additional rooms may be described as dens or family rooms.

- * The recommended residential development charges are lower than the average charged by surrounding municipalities. Therefore, they are not likely to reduce future residential development by causing the developers' "defection" to surrounding area municipalities.
- * An industrial/commercial development charge of \$4,673.06 per acre with an additional surcharge applied to developments where building coverage exceeds 50% of the land area of the lot is recommended to Council. This will be a new capital charge which reflects non-residential requirements for municipal capital facilities in the following categories:

	<u>Per Acre Cost</u>	<u>Per Square Foot Surcharge</u>
* Fire Department	\$2,397.23	\$0.11
* Engineering Department	1,938.36	0.09
* Traffic Department	<u>337.47</u>	<u>0.02</u>
Total	<u>\$4,673.06</u>	<u>\$0.22</u>

This is a minimum charge and is consistent with Hamilton's residential development levy practices, as well as with industrial/commercial practices in many Ontario municipalities. This is not expected to adversely affect development since the charge is below that of neighbouring municipalities and is minor in comparison to land costs and other factors influencing site selection.

- * The commercial/industrial capital charge recommended here is less than half the average charged by a sample of surrounding municipalities. Therefore, these charges are not likely to induce commercial/industrial developers to move to surrounding area municipalities.
- * The recommended development charges are projected to produce approximately \$38.5 million in revenues to finance the infrastructure required by new developments. This is about 16.50% of the City's estimated ten-year capital budget for 1989-98. Of the total amount, \$37 million is expected to be collected through the residential capital charge and the remainder, about \$1.5 million, will be collected through the commercial/industrial levy. In total, this will provide more than five times the revenues yielded by current development charges.

The detailed report and appendices which follow, support the foregoing findings and recommendations.

I INTRODUCTION

The Coopers and Lybrand Consulting Group is pleased to submit this report on the re-evaluation of the City of Hamilton's development charges policy. The objective of this study is to re-evaluate and update the City's current capital charges policy as it applies to the residential and commercial/industrial sectors in order to ensure that new capital facilities as a result of development are equitably financed.

In addition we have been asked to examine and present improvements to the City's current practices as they relate to the provision of parking facilities by developers directly or as a "cash in lieu" payment for parking to be built off-site by the City. This matter is addressed in a separate report, since we do not recommend incorporating a charge which is not universally applicable into a City-wide capital charge.

As a result of our study, we recommend that the current residential levy, based on 1989 replacement costs, be set at \$2,872.00 for single family, semi-detached and row dwellings, \$2,027.30 for apartments of two-bedrooms or more, and \$1,098.12 for bachelor and one-bedroom apartments.

The per capita cost of capital investment arising from residential and commercial/industrial growth has been calculated for each major City Department affected by development growth; this includes the Department of Culture and Recreation, Public Works, Public Library, Engineering, and Traffic, as detailed in Appendix I. The per capita costs for residential growth are based on establishing the current service levels for the 1989 population and then applying this to the estimated population that will be living in new development areas over the next ten years. The current service level is used in order to ensure that future residents are not levied for improvements to

existing facilities and also to comply with the Development Charges Act. The per acre and per square foot costs recommended for commercial/industrial growth are \$4,673.06/acre plus \$0.22 per square foot for developments of higher density than 50% coverage. These charges have been determined by estimating the current levels of service extended to these types of developments and then applying these service levels to the estimated amount of commercial and industrial space to be created in Hamilton in the next ten years. All the calculations are performed with the use of the City's current capital budget and are intended to comply with the Development Charges Act.

The salient features of our analysis are summarized in the balance of this report, supported by detailed schedules and calculation in the appendices.

EXHIBIT 1

NUMBER OF RESIDENTIAL PERMITS ISSUED YEARLY
(PROXY FOR HOUSING STARTS)

Year	Single & Semi-Detached	Row Dwellings & Apartments	Total Number Of Units
1985	465	292	757
1986	663	557	1,220
1987	1,065	116	1,181
1988	979	1,090	2,069
1989	1,078	420	1,498
Average	850	495	1,345

Source: City of Hamilton, Building Department

II THE ADDITIONAL POPULATION THAT WILL NEED TO BE SERVICED BY THE CITY HAS BEEN DETERMINED

Population projections for the City of Hamilton indicate that there will be no significant net change in the number of persons living within the municipality. There will be a fairly significant increase in the number of households, due to an increase in the number of new housing units to be created. Most of this new building activity will take place in areas not presently serviced by the existing infrastructure and thus will warrant the construction of new facilities.

An estimated 42,620 individuals will need new municipal services over the ten year period 1989-1998. The following subsections describe the manner in which this figure has been derived.

A. THE NUMBER OF NEW RESIDENTIAL UNITS THAT WILL BE BUILT IN HAMILTON EACH YEAR IS 1,345: 850 SINGLE AND SEMI-DETACHED HOMES, 450 ROW-DWELLINGS AND APARTMENTS

An examination has been made of residential building activity over the years 1984-1988. This involved an analysis of the number of residential building permits issued in the last five years. From this analysis we conclude that, on average, 1,345 new residential units are built in Hamilton each year. Of this total, on average, 850 are single and semi-detached homes and 495 are row dwellings & apartments. (See Exhibit 1, opposite.)

In addition, an analysis has been made of the yearly increase in the number of residential units assessed, and an average for the period 1985-1988 has been obtained (the data for 1984 were unavailable). This figure, standing at 1,429, is only slightly higher, about 6%, than that obtained by the historical analysis of building permits. The historical analysis of the building permits issued in the past, provides a more complete sample, as well as a more detailed breakdown of unit types, than the

ANALYSIS OF OCCUPANCY LEVELS

Unit Type	GOURLEY			FESSENDEN		
	Dwellings	Population	Occupancy Levels	Dwellings	Population	Occupancy Levels
Single	347	1,264	3.6	348	1,242	3.6
Semi-detached	219	776	3.5	300	995	3.3
Row dwellings	142	491	3.5	302	870	2.9
Apartments	0	0	n/a	258	457	1.8
Totals	708	2,531	3.6	1,208	3,564	3.0

Unit Type	WEIGHTED AVERAGES (GOURLEY, FESSENDEN)		
	Dwellings	Population	Occupancy Level
Single & Semi-detached	1,214	4,277	3.5
Row dwellings & Apartments	702	1,818	2.6
Totals	1,916	6,095	3.2

Source: City of Hamilton, Planning Department

analysis of the residential units being assessed. As a result, the number of units yielded by the former analysis is the one used in the calculation of the population that will need to be served.

B. AVERAGE OCCUPANCY LEVELS FOR NEW DEVELOPMENT AREAS ARE 3.5 FOR SINGLE AND SEMI-DETACHED HOMES AND 2.6 FOR APARTMENTS AND ROW DWELLINGS

Average occupancy levels of two existing neighbourhoods have been analyzed to obtain an estimate of the occupancy levels that will predominate within newly developed areas. The two neighbourhoods that were chosen are Gourley and Fessenden, whose average occupancy levels were calculated to be 3.5 for single family and semi-detached homes and 2.6 for row dwellings and apartments. (See Exhibit 2, opposite).

These data have been used to forecast the new Population to be served over the next ten years. In addition, in Section V, these data have been re-allocated to group row housing with singles and semis as a basis for computing capital charges by housing types. Apartment occupancy is also analysed by size of apartment in this Section.

The two neighbourhoods mentioned above, have been chosen on the basis that they are most representative of the type of residential development that will be taking place in Hamilton in the future. As well, they are mature neighbourhoods, in which households have achieved their full complement of children and thus are the best proxy for the population levels that will need to be serviced.

C. 42,620 NEW PERSONS WILL NEED MUNICIPAL SERVICES BY 1998

Assuming that future residential building activity will reflect the historical patterns observed in subsection A,

on average, over the next ten years, 850 new single and semi-detached homes and 395 row dwellings and apartments will be built in Hamilton each year. Multiplying this number of new units that will be built, by the appropriate average occupancy levels discussed in subsection B, indicates that 4,262 new persons will need new municipal services to be provided by the city each year.

Extrapolating this figure of 4,262 persons over the next ten years, indicates that 42,620 additional individuals will need new municipal services to be provided by the city by 1998.

III THE CAPITAL COSTS OF MAJOR SERVICES FOR NEW RESIDENTIAL GROWTH HAVE BEEN ANALYZED

A. THE PER CAPITA CAPITAL COST THAT WILL BE INCURRED IN SERVICING THE RESIDENTS OF NEW RESIDENTIAL DEVELOPMENT ARE \$844.71

The per capita costs of capital requirements arising from residential growth have been calculated for all major Hamilton municipal services. As noted below, this capital requirement totals \$844.71 per capita, after allowing for a debt support allowance of \$20.25 per capita for all services. The per capita cost, after provincial subsidies for each service, has been calculated as follows:

<u>DEPARTMENT</u>	<u>PER CAPITA COST</u>	<u>DEBT SUPPORT ALLOWANCE</u>	<u>NET PER CAPITA COST</u>
Culture and Recreation	\$280.11	\$6.57	\$273.54
Public Works-Parks Division	152.95	3.58	149.37
Public Library	106.06	2.48	103.58
Fire Department	86.34	2.02	84.32
Engineering Department	232.96	5.45	227.51
Traffic Department	<u>6.54</u>	<u>.15</u>	<u>6.39</u>
Total	<u>\$864.96</u>	<u>\$20.25</u>	<u>\$844.71</u>

The sub-sections which follow, explain the per capita cost calculation process for each municipal department's capital requirements arising from growth. Section IV describes the calculation of the Debt Support Allowance.

B. CULTURE AND RECREATION: \$273.54 PER CAPITA COST

The major components of culture and recreation capital costs to serve newly developed areas are indoor recreation facilities and outdoor recreation facilities (excluding park land and park

facilities which are covered in section III. C. of this report). The capital costs of these facilities have been obtained by determining the portion of budgeted capital projects assignable to residential development growth. These proportions, were determined by applying current service levels to the additional population that will need to be served over the period 1989-1998. This figure amounts to 42,620 persons and is derived in section II. All cost calculations have been performed using 1989 dollars.

The two most significant capital items that will be incurred by the Department are costs for constructing new skating arenas and recreation/aquatic complexes; the former accounting for \$74.69 of the per capita cost of recreation facilities and the latter for \$165.80.

No portion of the costs that will be incurred to provide new development areas with recreation facilities have been assigned to commercial/industrial growth, as it is felt that this type of service directly benefits the residential component of the population. Accordingly, all of the capital expenditures that will be incurred by the Department of Culture and Recreation due to development growth, have been assigned to residential development growth.

The details of current service levels and the calculation of per capita costs for the services that will have to be provided by the Department of Culture and Recreation, are recorded in Appendix I, Schedule 1.

A debt support allowance of \$6.57 is apportioned to gross per capita capital costs of \$280.11, to arrive at a net levy of \$273.54.

C. PUBLIC WORKS - PARKS DIVISION: \$149.37 PER CAPITA COST

The per capita cost of providing the population that will be residing in new development with the requisite park facilities has been calculated by examining the costs that will be incurred to upgrade land procured through the 5% land dedication levy. These are calculated to be \$152.95, and include the cost of such things as grading and seeding, hard surfacing (pathways, sitting areas), courts (basketball, hockey, tennis, bocci), fencing, landscaping (plant material, timber work), benches, lighting, under-drainage (sewer, weeping tile), baseball diamonds, sport fields, baseball stadiums, and running tracks, but exclude the cost of the raw land which is to be provided through the 5% park land dedication.

For a detailed analysis of the calculations employed to obtain the \$152.95 gross per capita cost, see Appendix I, Schedule 2.

\$3.58 is subtracted from the gross levy of \$152.95, to obtain a net figure of \$149.37. This is to account for the debt support capability of new residential development.

D. HAMILTON PUBLIC LIBRARY: \$103.58 PER CAPITA COST

The per capita cost of \$106.06 for library capital requirements (before debt support allowance) is based upon current service levels: .35 square feet of library space per capita and 2.1 books per capita. This is lower than the service target levels of .45 square feet per capita and 2.28 books per capita. This approach is in compliance with the legislation dealing with capital cost recovery, which stipulates that current service levels must be used in calculating lot levies. It is an approach which also ensures equity and guarantees that individuals that will be living in new development do not pay

for the service level improvement of current residents.

Based on current service levels, it has been established that two new library branches will have to be built over the next ten years, to service the population that will be living in new development areas. The cost of constructing these two new branches will be \$4,482,379.48 which includes the cost of the lots they will be built on, as well as the actual cost of creating the physical structures. When this \$4,482,379.48 is divided by the 42,620 individuals that will be served by these two branches, a gross per capita cost of \$106.06 is obtained.

A detailed discussion of the current service levels and capital costs utilized in calculating the gross levy, is presented in Appendix I, Schedule 3.

A \$2.48 per capita debt support allowance has been apportioned to and deducted from library services capital requirements to arrive at the net levy of \$103.58 per capita.

E. FIRE DEPARTMENT: \$84.32 PER CAPITA COST

After an analysis of the spatial orientation of future residential development, it has been determined that two new fire stations will need to be constructed in order to maintain the department's current service standard of a 3.5 minute response time throughout the City. As a result, the cost of these two stations is attributed to new development growth. Eighty percent of the expenditure, or \$86.34, is assigned to residential growth, while the remaining 20% is assigned to commercial industrial growth, based on the current call-response and workload analysis.

For a detailed description of the calculations employed in arriving at the gross per capita cost of \$84.32, see Appendix I, Schedule 4.

A debt support allowance is credited to the gross per capita cost of \$86.34 to obtain a net figure of \$84.32.

F. ENGINEERING: \$227.51 PER CAPITA COST

The Engineering Department will experience the second highest capital expenditure due to residential growth. Capital costs for services provided by the Engineering Department include the oversizing of roads, the installation of stub streets, street lights and fencing. The level of services that will need to be provided, has been obtained by taking the average level of services currently extended to the residents of Hamilton. It has been assumed that the population living in new development areas will require the same level of service. These services have been costed in 1989 dollars to obtain a per capita cost of \$232.96 which when multiplied with the estimated number of individuals that will be living in new residential areas, of 42,620, yields a total expenditure of \$9,928,755.20.

For a detailed listing of all the calculations employed to obtain the gross per capita cost of \$232.96, see Appendix I, Schedule 5.

A per capita debt support allowance of \$5.45 is credited to the gross per capita levy of \$232.96 to obtain a net levy of \$227.51.

G. TRAFFIC DEPARTMENT: \$6.39 PER CAPITA COST

The major capital expenditure the Traffic Department will incur covers the costs associated with the planned construction of the new traffic operations control building. This building is being constructed with 20% oversizing in mind, to account for increased staff that will have to be accommodated as the City experiences development growth. Fifty-nine percent of this extra space will be taken up by the staff who will have to be employed to undertake the new workload that will be imposed upon the department by new development growth. Fifty percent of this increase in workload is estimated to be due to residential development growth, or \$2.99 per capita, while the remaining 50% of the cost is attributed to commercial and industrial development growth, based on past experience. The Department will also have to incur a per capita cost of \$3.55, to supply new neighbourhoods with the necessary traffic signs. This cost is based on the average service levels required by current neighbourhoods.

For a detailed analysis of the calculations performed to obtain the gross per capita levy of \$6.54, see Appendix I, Schedule 6. \$.15 is subtracted from the gross per capita cost of \$6.54 to account for the debt carrying capacity of new development. This yields a net per capita levy of \$6.39.

SURVEY OF RESIDENTIAL CHARGES OF SELECTED
ONTARIO CITIES AND TOWNS
NOVEMBER 1989

	Single Family	3 Bedroom Apartments	2 Bedroom Apartments	1 Bedroom Apartment
Brampton	\$7,348	\$7,348	\$5,619	\$3,457
Burlington	\$4,795	\$2,873	\$2,873	\$1,931
Oakville	\$3,600	\$3,350	\$2,375	\$1,125
Mississauga	\$3,517	\$2,212	\$2,212	\$2,212
Markham	\$3,500	n/a	n/a	n/a
Oshawa	\$3,431	\$1,122	\$1,122	\$1,122
Hamilton (Recommended)	\$2,872	\$2,027	\$2,027	\$1,098
St. Catharines	\$2,777	\$1,520	\$1,520	\$1,520
Grimsby	\$2,300	n/a	n/a	n/a
Cambridge	\$2,271	\$1,109	\$988	\$867
Stoney Creek	\$2,260	\$1,595	\$1,595	\$865
Hamilton (Current)	\$500	\$350	\$350	\$350
Average (i)	\$3,580	\$2,348	\$2,034	\$1,455

Notes: (i)Average Excludes Hamilton and those charges marked n/a.

IV CAPITAL CHARGES OF SELECTED MUNICIPALITIES HAVE BEEN ANALYSED

A sample of capital charges for residential and commercial/industrial development currently levied by selected municipalities has been gathered. The sample was selected in consultation with City staff to cover neighbouring cities and towns. The results of this survey are outlined in the sub-sections and exhibits that follow.

A. THE AVERAGE RESIDENTIAL CAPITAL CHARGE FOR A SAMPLE OF SELECTED MUNICIPALITIES IS \$3,580 FOR A SINGLE FAMILY UNIT

The average residential capital charges for a selected sample of municipalities has been compiled by Coopers and Lybrand in November, 1989 and is displayed in Exhibit 3, opposite. This sample indicates average charges of \$3,580 for single family units, \$2,348 for apartments of three bedrooms, \$2,034 for two bedroom apartments and \$1,455 for one bedroom bachelor apartments. These average charges are all higher than those recommended for Hamilton of \$2,872 for single family units, \$2,037 for three and two bedroom apartments, and \$1,098 for one bedroom and bachelor apartments. In fact, the charges recommended for Hamilton are lower than those levied by Brampton, Burlington, Oakville, Mississauga, Markham and Oshawa, and only marginally higher than those currently charged by St. Catharines, Grimsby, Cambridge and Stoney Creek. It should be noted that many of the municipalities surveyed will be revising their charges in 1990 in response to the new Development Charges Act and that this will further increase competitive charges.

In summary, the City's "competitive position" versus surrounding municipalities will not be compromised by the imposition of the recommended residential capital charges.

The capital charges currently imposed by the City amount to \$500

EXHIBIT 4

SURVEY OF COMMERCIAL/INDUSTRIAL CAPITAL CHARGES OF SELECTED ONTARIO CITIES AND TOWNS NOVEMBER, 1989

	Existing Charge	Per Acre
Oakville	\$55,903/ha	\$22,633
Mississauga	\$40,210/ha	\$16,279
St. Catharines	\$18,090/ha	\$7,324
Cambridge	\$0.32/sq. ft.	\$6,971
Brampton	\$5,521/acre	\$5,521
Hamilton	\$4,673/acre	\$4,673
Burlington	\$6,706/ha	\$2,715 (ii)
Markham	n/a	n/a
Oshawa	n/a	n/a
Grimsby	none	none
Stoney Creek	none	none
Hamilton	none	none
Average (i)	n/a	\$11,184

Notes: (i)Average excludes Hamilton and those charges designated as n/a or none.

(ii)Will likely be increased in 1990.

for single family units and 350 for multiple units, which were initiated in 1976 and have not been adjusted since then, even for inflation. These amounts are considerably lower than the charges imposed by all the other municipalities in the sample and further illustrates the need for establishment of new capital charges policies in the City of Hamilton.

B. THE AVERAGE COMMERCIAL/INDUSTRIAL DEVELOPMENT CHARGE FOR A SELECTED SAMPLE OF MUNICIPALITIES IS \$11,184 PER ACRE

The average per acre commercial/industrial capital charges for the selected municipalities outlined in Exhibit 4, opposite, has been calculated to be \$11,184. This is more than double the \$4,673 per acre cost recommended for the City of Hamilton.

Currently, Hamilton does not levy a commercial/industrial development charge. At this time, only two others in this sample follow the policy of not imposing development charges upon commercial/industrial development. These are Grimsby and Stoney Creek, neither of which have a significant commercial/industrial sector.

This further supports the conclusion that the imposition of the commercial/industrial capital charge of \$4,673/acre will not negatively affect Hamilton's ability to attract commercial/industrial development.

V ANNUAL TAXATION OF NEW RESIDENTS WILL SUPPORT DEBT OF \$122.71 PER CAPITA OF WHICH \$20.25 IS RELATED TO NEW DEVELOPMENT

As new taxable assessment is added by new residential units, the City can issue additional debt without adverse effects on existing debt to assessment ratios. Therefore, an allowance has been calculated for this source of financing and deducted from the net capital costs previously discussed in section II. A of this report.

The following sub-sections explain the basis for estimating the debt support allowance credited in determining a net levy.

A. OUTSTANDING PORTION OF DEBT SUPPORTED BY RESIDENTIAL ASSESSMENT IS 6.69% OF RESIDENTIAL WEIGHTED TAXABLE ASSESSMENT

The average debt supported by residential assessment to weighted taxable residential assessment ratio for the years 1985-1988 was calculated to be 6.69% and this has been used to calculate the per unit debt support appearing in Appendix II. If future debt levels remain at the levels sustained during the past four years there will be no added burden placed on existing taxpayers. Therefore, the new residential assessment is capable of paying for a portion of the servicing costs incurred through the debt repayment portion of their general taxation. Accordingly 6.9% of the new assessment has been allowed as a credit against the capital costs of serving the new residents.

B. DEBT SUPPORTED BY AN AVERAGE NEW HOUSING UNIT IS \$392.68

The debt supported by residential growth is calculated on a per capita basis so that the debt support credit may be introduced into the calculation of the net levy. This is done by calculating the debt supported by an average new housing unit and then dividing that by the average occupancy of a new unit.

The taxable assessment of new housing units has been examined

between 1985 and 1988 and the average assessment for this period is calculated to be \$6,900.98. We have assumed that this average will be maintained in the future. The taxable assessment of an average new unit has been then weighted to establish an average residential weighted assessment per new housing unit of \$5,865.83. When the debt/assessment ratio derived in subsection A is applied to this figure, \$392.68 is the amount obtained as the debt supportable by an average new dwelling unit.

An analysis of the number of residential building permits issued in the past five years, yields an average yearly figure of 1,345. Using this as a proxy for the number of new units that are built in Hamilton each year and then extrapolating this over the next ten years, indicates that 13,450 new residential units will be created between 1989-98. When this is used to divided the estimated population that will be residing within these units, of 42,620 persons, an average occupancy level of 3.2 is obtained for all types of housing units.

The average debt support capability of new units is, therefore, \$122.71 per capita. This is calculated on the basis of \$392.68 of debt per unit, divided by 3.2 persons per unit. This \$122.71 is the estimated level of debt which can be supported by each new resident, through payments included in the general municipal tax levy.

C. AFTER PROVIDING FOR REPLACEMENT EXPENDITURE REQUIREMENTS, NET DEBT SUPPORT OF \$20.25 PER CAPITA WILL OFFSET SOME CAPITAL COSTS OF GROWTH

The capital levy is intended to recoup only the capital expenditures that will be incurred as a result of new development. This does not include replacement related expenditures, a portion of which is financed by the City's debt. Thus, in the interest of equity, a portion of the debt which can

be supported by a new resident must be used to help the existing taxpayers pay for the non-growth related expenditure requirements. In the case of the City of Hamilton, 83.50% of total debt, or an amount equal to \$102.46 has been calculated as new development's share of replacement expenditures. The 83.5% is based on the proportion of the 1989-98 capital expenditures which are not growth related. These costs are not included in the calculation of the development charges and, therefore, the new population should be responsible for their fair share of financing these costs through their municipal taxes. (See Appendix II).

VI THE LOT LEVY VARIES WITH OCCUPANCY FOR DIFFERENT TYPES OF HOUSING UNITS

The per capita capital cost for residential growth has been calculated in Appendix I to be \$864.96. The per capita cost basis is converted to a capital contribution per dwelling, based on occupancy rates. The occupancy rate per dwelling type detailed in Appendix III is the most appropriate method for converting the per capita capital cost to a contribution for each dwelling type. The following occupancy factors have been derived for this purpose:

	<u>PERSONS PER UNIT</u>
* Single family detached units, semi-detached units, row dwellings	3.4
* Apartments of Two-bedrooms or more	2.4
* Bachelor and One-bedroom apartments	1.3

The following subsections discuss the derivation of these occupancy factors and the resulting levy requirement by housing type.

A. UNIT OCCUPANCIES RANGE FROM 1.3 IN SMALL APARTMENTS TO 3.4 IN SINGLE FAMILY HOUSING

To obtain an estimate of the occupancy levels that can be anticipated for new development an examination has been made of the occupancy levels of two existing neighbourhoods Gourley and Fessenden. These two neighbourhoods were chosen because they are in the latter stages of their first decade of existence. Therefore their populations are at their peak levels. That is, they are neither in their declining period (the period where household heads are aging and children are leaving home) or their growing period (where children are entering households). As a result they indicate the population levels that the municipal infrastructure must be able to support within new subdivisions.

The analysis of these two neighbourhoods indicates that the occupancy levels for single-family detached, semi-detached, and row dwellings are quite similar. Therefore a weighted average of the occupancy levels of these three types of dwelling units has been taken which yields the occupancy figure of 3.4 persons per dwelling unit. (See Appendix III.)

Of the two neighbourhoods examined, only Fessenden contains apartment units. Therefore the data for Fessenden have been used to estimate the occupancy level for apartments. As actual occupancy levels were unavailable they have been derived indirectly. Estimates of overall occupancy levels for various types of apartment units have been obtained at the Regional level from the Regional Planning Department. These occupancy rates were then applied to the various apartment units existing in Fessenden and this has been found to be consistent with the total number of individuals living within these apartment buildings. The data regarding the type and number of units as well as the total number of persons living in apartment buildings is available. (See Appendix III.)

B. THE RECOMMENDED CAPITAL CONTRIBUTIONS RANGE BETWEEN \$1,098 AND \$2,872, DEPENDING ON TYPE OF DWELLING UNIT

Based on the above occupancy rates, the lot levies for 1989 have been calculated as follows:

	<u>PERSONS PER UNIT</u>	<u>NET PER CAPITA COST</u>	<u>REQUIRED CAPITAL CONTRIBUTION</u>
* Single family, semi-detached units, and row dwellings	3.4	\$844.71	\$2,872.00
* Apartments of Two Bedrooms or more	2.4	\$844.71	\$2,027.30
* Bachelor and One Bedroom Apartments	1.3	\$844.71	\$1,098.12

The proposed levy of \$2,872.00 for single detached family dwellings, represents a considerable increase over the \$500.00 per single family unit charge currently imposed by the City of Hamilton. We believe that this increase is justified. The current levy was imposed in 1976 and is, therefore, based on 1976 service requirements and costs. No indexation of these charges has been carried out in the last thirteen years. These are now quite outdated and clearly do not address the current costs of capital services for new development.

When the proposed levy is compared to other lower tier levies in Ontario, it is not "out-of-line" and in fact is in the low end of the spectrum. Therefore, it is felt that the City will not experience a reduction in residential growth by having developers "defect" to other surrounding municipalities. In fact, it will ensure residential development growth, by safeguarding the City's financial ability to provide the level of municipal services the future citizen's of Hamilton can reasonably expect.

VII AN INDUSTRIAL/COMMERCIAL LEVY OF \$4,673.06 PER ACRE IS RECOMMENDED WITH A \$0.22 PER SQUARE FOOT SURCHARGE ON ANY BUILDING AREA EXCEEDING 50% OF THE LOT

The implementation of an industrial and commercial levy for new commercial/industrial development is appropriate since such development results in capital funding to provide the services for such development. However, it is also necessary to ensure that the levy:

- * does not act as a disincentive to further development;
- * is not out of line with levies charged by other municipalities; and
- * only includes those capital services directly attributable to commercial/industrial development.

The following subsections describe the basis for the recommended commercial/industrial levy.

A. MANY OTHER ONTARIO MUNICIPALITIES HAVE A COMMERCIAL/INDUSTRIAL LEVY

The City of Hamilton has enjoyed substantial commercial/industrial growth over the last five years. On average during the years 1984-1989, 627,959 square feet of commercial/industrial space have been created annually in Hamilton. General factors contribute to this growth, including the availability of suitable land, a socially attractive residential environment, and proximity to major markets and transportation facilities.

Recent experience in municipalities imposing a commercial/industrial levy appears to indicate that the levy has not adversely affected the level of commercial/industrial development

occurring within them.

The City of Hamilton currently levies a capital charge on new residential development for new infrastructure that the City must provide. There is no reason that new industrial/commercial growth should not contribute to the capital costs the City incurs in providing it with the necessary municipal services, in the same way.

B. COMMERCIAL/INDUSTRIAL DEVELOPMENT SHOULD CONTRIBUTE TO CAPITAL COSTS OF THE ENGINEERING, FIRE, AND TRAFFIC DEPARTMENTS

The residential levy covers the per capita costs for the Engineering, Fire, and Traffic Departments as well as the more "people-related" services. Clearly, the industrial and commercial sectors do not directly use the "people-related" services provided by the Public Library, or the Departments of Culture and Recreation and Public Works - Parks Division. It is only their employees, if they happen to live in Hamilton, who benefit directly from these services, rather than the commercial/industrial sector itself. Therefore, we recommend that the industrial/commercial levy should be calculated based only on the capital costs which they directly affect, such as those incurred by the Engineering, Fire, and Traffic Departments.

The commercial and residential sectors should meet parking space requirements or should pay separately for the capital costs incurred by the Parking Authority for providing municipal parking spaces for their benefit mainly in the downtown core. Since this affects a very specific geographic area we recommend that this continue to be a requirement of the effected developers under the existing by-law.

We understand that a 2% parkland dedication for commercial/industrial development is now permitted. This

presumably meets the need for open space, that is desirable regardless of the type of development. We do not recommend a parkland capital charge during this first stage of commercial/industrial capital levies; this should be reviewed at the first update in three years.

C. 6,279,590 SQUARE FEET OF COMMERCIAL/INDUSTRIAL SPACE ARE PROJECTED TO BE BUILT IN HAMILTON BETWEEN 1989-98

On average during the five year period, 1984-1988, 627,959 square feet of commercial/industrial space have been built each year. As this period reflects years of high as well as low growth it is thought that it is a good representation of the levels of development that will take place in the future. As a result, this is the square footage that is used as the basis for calculating a per square foot cost of municipal services for commercial/industrial growth.

The most equitable way in which to implement a commercial/industrial levy is in a two part format which distinguishes between normal site coverage and high-density development. Accordingly we recommend that the first part be a per acre charge which is supplemented by a second part, a per square foot charge. The first part is to be payable by all new commercial/industrial developments, while the second part is to be applied as a surcharge to only those developments in which the coverage of building to lot area exceeds 50%. The square foot fee should be payable only on that portion of the square footage of a building exceeding 50% of the lot area. This accounts for the fact that the amount of servicing a development requires is related positively to the number of individuals it accommodates, which in turn is positively related to the building area.

D. ENGINEERING: \$1,938.36/ACRE, \$0.09 PER SQUARE FOOT SURCHARGE

The costs that the Engineering Department will incur in providing services to new commercial/industrial development have been calculated to be \$2,397.23 per acre. These services include such things as the oversizing of roads, and the installation of stub streets and streetlights in commercial/industrial parks. The details of the calculations employed to obtain this figure can be found in Appendix I, Schedule 4 and Appendix IV.

E. FIRE DEPARTMENT: \$2,397.23 PER ACRE, \$0.11 PER SQUARE FOOT SURCHARGE

The fire protection costs for new commercial/industrial growth are based on the capital costs that the Department will incur over the ten year period 1989-1998 and on the proportion of commercial/industrial versus residential area serviced by each fire station.

The total capital costs used in the calculations of the commercial/industrial levy reflect costs of constructing two new fire stations and amount to \$4,600,000. As 20% of the services these stations will provide will be used by commercial/industrial development, 20% of the costs, or \$920,000 should be borne by commercial/industrial development. Dividing this figure by the 6,279,590 square feet of commercial industrial space that will be built over the next ten years, yields the \$0.09 per square foot capital charge. Applying a 50% coverage ratio a per acre cost of \$2,397.03 is obtained. Details of these calculations are outlined in Appendix I, Schedule 4 and Appendix IV.

F. TRAFFIC DEPARTMENT: \$337.47 PER ACRE, \$0.02 PER SQUARE FOOT SURCHARGE

The capital costs that will be incurred by the Traffic Department to service commercial/industrial development over the next ten years have been calculated to be \$337.42 per acre. These costs include the growth related portion of the costs of constructing the new operations centre.

The costs of commercial/industrial growth related portion of the capital costs of the new operations centre have been calculated to be \$127,440. When this is divided by the 6,279,590 square feet of commercial/industrial space that will be created in Hamilton over the next ten years, yields a per square foot cost of \$0.02. Applying a 50% coverage ratio a per acre cost of \$337.24 is obtained. Details of the calculations employed to obtain this square foot cost and the per acre charge are presented in Appendix I, Schedule 6 and Appendix IV.

SUMMARY OF TOTAL GROWTH RELATED CAPITAL COSTS

Department	% of		% of		Total	% of	
	Residential	Budget	Comm/Indst	Budget		Budget	Budget 1989-98
Culture And Recreation	\$11,938,126.10	5.12%	--	--	\$11,938,126.10	5.12%	
Public Works - Parks Division	\$6,518,750.48	2.80%	--	--	\$6,518,750.48	2.80%	
Public Library	\$4,520,179.48	1.94%	--	--	\$4,520,179.48	1.94%	
Fire	\$3,680,000.00	1.58%	\$920,000.00	0.39%	\$4,600,000.00	1.97%	
Engineering	\$9,928,755.20	4.26%	\$565,263.00	0.24%	\$10,494,018.20	4.50%	
Traffic	\$278,741.00	0.12%	\$127,440.00	0.05%	\$406,181.00	0.17%	
Total	\$36,864,552.26	15.81%	\$1,612,703.00	0.69%	\$38,477,255.26	16.50%	\$233,196,000

VIII GROWTH RELATED COSTS ARE \$38.5 MILLION OR 16.5% OF THE 1989-98 BUDGETED CAPITAL EXPENDITURES

The capital budget for the period 1989-98 amounts to approximately \$233,196,000. Growth related capital expenditures for this period are calculated to be approximately 16.5% or \$38,477,255 of this total as shown in Exhibit 5, opposite. This is based on the detailed capital cost data provided by the City staff and analysed for each Department in the Appendices to this report.

Of the total growth related expenditures of \$38,477,255, 15.8% or \$36,864,552 are related to residential development growth. The remainder, or \$1,612,703 of growth related expenditures are related to commercial/industrial development growth.

This indicates that the City must continue to rely upon the general mill rate for the majority of its capital financing, even though the more equitable development charge will pay for servicing new development.

IX ADMINISTRATIVE CONSIDERATIONS FOR THE IMPLEMENTATION OF THE CAPITAL CHARGES

The following sections outline the timing for collection of the recommended levy amounts and some of the administrative and implementation issues to be considered.

A. THE CAPITAL CHARGES SHOULD BE COLLECTED AT BUILDING PERMIT STAGE

Currently the City of Hamilton collects its levy at the building permit stage. The recommended development charges should continue to be payable at the building permit stage and should be fully collected before the issuance of the building permit. Such a policy is in compliance with the legislation regarding the collection of development charges, the Development Charges Act.

B. SOME ADMINISTRATIVE AND IMPLEMENTATIONAL CONSIDERATIONS

1. The City Should Seek to Co-ordinate the Collection of Charges with the Region.

The Development Charges Act obligates local-tier municipalities to collect any Regional capital charges levied at the building permit stage on the Region's behalf. As the City will thus be responsible for collecting the Regional levy it will have to assign someone to do so. This individual should then also be responsible for ensuring the collection of the City's own capital charges.

2. The City's Capital Charges Should Only be Payable at One Location

The City's capital charges should be payable only at one designated location. This will forestall any problems that might be associated with multi-location collection. Thus it will ensure that the levy is collected in full and on time before the building permit is issued to the developer.

3. Capital Charges Should Be Adjusted Twice Annually By The Southam Construction Index For Ontario

The recommended capital charges should be adjusted every six months based on the percentage change in the Southam Construction Index For Ontario. The updated charge should become effective as soon as the six month data is published.

4. The City Should Update Its Levy and the Supporting Study Every Three Years.

The City's capital charges and the study supporting it should be carried out approximately every three years.

This will ensure that the imposed charges always reflect the City's true capital requirements and costs. This timing corresponds with the levy updates recommended to the Region.

5. The City Should Establish a Separate Reserve Fund for Development Charges.

The funds in this Development Charges Reserve should only be used to meet growth-related net capital costs for which the development charge was imposed. This is in compliance with Section 16 of the Development Charges Act.

6. The Only Land To Be Exempt From Paying the Capital Charge is Land Owned By a Municipality or a Board of Education

This requirement is in compliance with the Development Charges Act, Section 3(6). It is unclear how this will affect major developments constructed on land leased from the City.

For any issues such as the leased land issue, we recommend that the City refer to its solicitor or outside counsel for a legal opinion based on the new legislation.

X CONCLUSION

Capital contributions are a necessary part of the capital cost of new development to ensure that such development does not adversely affect existing taxpayers. We believe that the thorough analysis undertaken with City staff justifies the recommended residential and commercial/industrial levies.

Continued inflation adjustment of these levies on a semiannual basis is warranted. Comprehensive updating at three-year intervals is also appropriate to take account of any changes in revised service level requirements, municipal financing, housing occupancy levels and related changes.

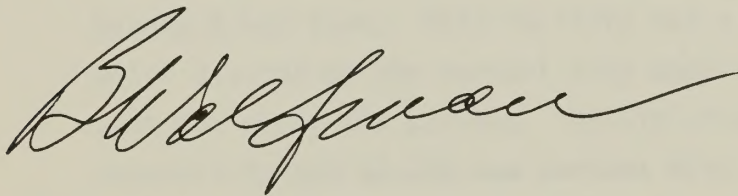
We do not believe that the recommended capital charges will deter development due to added development costs or property prices. Developed land is normally sold at the prevailing market price for lots or acreage of similar type and transportation access, regardless of the underlying costs. Thus in cases where a municipality charges a lower development charge than the norm for other municipalities, the developer cannot be expected to pass that reduction on to the purchasers of developed real estate. Developers have, in fact, often shown themselves willing to pay reasonable capital charges, particularly in cases where these charges help ensure the timely provision of infrastructure essential to their development. Such charges imposed in neighbouring Regions have had no discernable effect upon development.

We therefore urge Council to adopt the capital charges and policies recommended in this report, as they are necessary for the fair and equitable financing of capital expenditures associated with development growth. Furthermore, they are reasonable in relation to the charges imposed by neighbouring municipalities.

We appreciate the invaluable assistance provided by the City staff throughout this study. We trust that the recommendations within this report will contribute to the sound funding of growth in the City of Hamilton.

THE COOPERS AND LYBRAND CONSULTING GROUP

per:

A handwritten signature in black ink, appearing to read 'B. Wolfman', with a long, sweeping horizontal stroke extending to the right.

B. Wolfman
Partner

\vq

city population of 307,160. This yielded the ratio of 1 acre per 4,388 persons. Multiplying this ratio by 42,620 yields 9.6 as the number of acres of horticultural park space required to service new development. Dividing this 9.6 acres into the 40 acres that the park will cover, results in 24% of the costs of the park being attributable to growth.

d) **BASEBALL STADIUMS**

Currently there is only one existing baseball stadium, located in Bernie Arbor Park. This facility has a seating capacity of 2,500, which divided by the current city population yields the ratio of 1 seat for every 123 persons. Multiplying this current service standard by the 42,620 new persons that will need to be serviced, indicates that 347 new seats will be required to service residential growth. Dividing this figure by the total capacity of the new stadium of 7,500 seats, indicates that 5% of the planned seat construction is required to service new growth. Multiplying this 5% by the total construction costs of the stadium, yields \$250,000 as the cost attributable to growth.

e) **RUNNING TRACKS**

The track to be constructed will be a 400 metre, 8 lane, rubber surface track, complying with IAAF standards. Currently there are only two existing facilities in Hamilton, one at Mohawk Park and another at McMaster University. This means that the current service standard is 1 track per 153,580 persons. Multiplying this by 42,620 indicates that 28% of the costs of the track are attributable to growth. In turn, this means that 28%, or \$140,000, of the total dollar expenditure are attributable to new development growth.

f) **PARK DEVELOPMENT**

A total of approximately 200 acres of parks will need to be created in Hamilton to serve the population living in newly developed areas. The figure of 200 acres, mentioned above, was

obtained by applying the service standard of 4.68 acres/1,000 (obtained by taking a current inventory of City parks and dividing the resulting figure by the 1988 City population of 307,160) to the population figure of 42,620. As 294 acres of parkland are planned to be developed over the next ten years 68% of the development costs are assigned to growth. Also, as the direct beneficiaries of these parks will be the residents of Hamilton the total cost is assigned to residential growth. The individual parks are detailed below:

- i) Park development of 6 acres serving Randall neighbourhood. One and one half acres will be taken up by the construction of a baseball diamond, costed in item (a). Another 1.5 acres will be used to construct a sports field, costed in item (b). Thus, 3 acres are subtracted from the 6 acres that the park will cover, when calculating the park development costs.
- ii) Park development of 10 acres serving Kerringham neighbourhood.
- iii) Park development of 6 acres, serving Jerome neighbourhood.
- iv) Park development of 6 acres, serving Barnstown neighbourhood. One and one half acres will be taken up by the construction of a baseball diamond, costed in item (a). Another 1.5 acres will be used to construct a sports field, costed in item (b). Thus, 3 acres are subtracted from the 6 acres that the park will cover, when calculating the park development costs.
- v) Park development of 8 acres, serving Kennedy West neighbourhood.
- vi) Park development of 6 acres

- vii) Park development of approximately 4 acres, serving Crerar neighbourhood.
- viii) Park development of Falkirk West neighbourhood.
- ix) Park development of 2.27 acres, serving Alison neighbourhood.
- x) Park development of 4.5 acres, serving Broughton West neighbourhood.
- xi) Park development of 48 acres, to be known as William Connel Park. Six acres will be taken up by the construction of a baseball diamonds, costed in item (a). Three acres will be used to construct a sports fields, costed in item (b). The planned stadium will take up 18 acres, costed in item (d). Thus, 27 acres are subtracted from the 48 acres that the park will cover, when calculating the park development costs.
- xii) Park development of 27 acres, to be known as William Schwenger Park. Six acres will be taken up by the construction of baseball diamonds, costed in item (a). One and one half acres will be used to construct sports fields, costed in item (b). The planned track will take up 9.5 acres, costed in item (e). Thus, 17 acres are subtracted from the 27 acres that the park will cover, when calculating the park development costs.
- xiii) Park development of 22 acres, to be known as Billy Sherring.
- xiv) Park development of 60 acres, to be known as Turner Park.

APPENDIX I
SCHEDULE 2

- xv) Park development of 78 acres, to be known as Mohawk Sports park.

The development of all of these parks was costed at \$30,200 per acre. A breakdown of this \$30,200 per acre cost is presented in Table 3.

APPENDIX I

This appendix describes the calculation of the municipal capital investment required to meet the needs of new residential and commercial/industrial development. Calculations are on a per capita basis. The services requiring such future capital expenditure are dealt with in the following separate schedules to this appendix:

	Schedule
* Department of Culture and Recreation - Recreation buildings, and related land	1
* Public Works - Parkland, and outdoor facilities	2
* Library - Buildings, land, and books	3
* Fire Department - Fire Stations	4
* Engineering Department - Roads and Street Lighting	5
* Traffic Department - Building, Signs	6

DEPARTMENT OF CULTURE AND RECREATION

The Department of Culture and Recreation is responsible for providing the citizens of the city of Hamilton with all indoor recreational facilities and outdoor recreational facilities not provided by Public Works - Parks Division.

To calculate the capital expenditures that will be incurred by this department in providing new development with the above mentioned services, the following methodology was employed:

- A current inventory of all the facilities administered by this department was taken.
- The results of this survey were subsequently combined with the figure representing the current population of the city, to arrive at a current service standard (See Table 2.)
- The current service standard was then applied to the estimated population to be serviced. This provided an estimate of the facilities that will have to be built, in order to provide the population living in new development areas, with the level of services currently provided to the citizens of the City of Hamilton.

Once the physical number of facilities that will be built to service new development areas was established, a costing exercise was performed. This entailed referring to the city's 1989 Capital Expenditure Budget, from which costs of projects assignable to growth were obtained. Subsequently, costs of all individual projects were summed to obtain a total capital cost component assignable to growth.

A summary of the ten year capital expenditure projections is presented in Table 1, together with an allocation of an appropriate portion of costs to

APPENDIX I
SCHEDULE 1

growth-related residential development. For each type of facility, a separate discussion follows the table, analyzing the current service levels, and the bases for apportioning costs due to growth.

No costs were assigned to commercial/industrial development as the benefits of these services are assumed to directly accrue to the residential population. As a result, the total costs of recreation services have been assigned to residential development growth.

Activity	Actual	Budget		Actual	Budget	Actual	Budget
		Actual	Budget				
1. Public Health Services							
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DEPARTMENT OF CULTURE AND RECREATION CALCULATION OF GROWTH RELATED PORTION OF CAPITAL COSTS						
Project	(i) Amount	Residential			Commercial/Industrial	
		(ii) % Growth Related	\$ Growth Related	Cost Per Capita	(ii) % Growth Related	Cost Per Square Foot
a) Skating Facilities (Arenas) South-East Mountain Arena	\$5,736,000.00	55.50%	\$3,183,480.00	\$74.69		
b) Senior Citizen Centres Mountain Senior Citizens' Centre	\$1,962,660.00	42.00%	\$824,317.20	\$19.34		
c) Therapeutic Pools Ryerson Recreation Centre Therapeutic Pool	\$106,950.00	28.00%	\$29,946.00	\$0.70		
d) Recreation Centres Riverdale Recreation Complex Recreation Complex - South Central Mountain Subtotal	\$4,564,155.00 \$3,734,370.00 \$8,298,525.00	100.00% 67.00% 85.15%	\$4,564,155.00 \$2,502,027.90 \$7,066,182.90	\$107.09 \$58.71 \$165.80		
e) Playground Equipment	\$350,000.00	55.00%	\$192,500.00	\$4.52		
f) Outdoor Pools Walker Pool Restructure	\$641,700.00	100.00%	\$641,700.00	\$15.06		
g) Bicycle Paths	\$662,659.00	6.88%	\$45,603.00	\$1.07		
Total	\$17,095,835.00	69.83%	\$11,938,126.10	\$280.11	\$0.00	\$0.00

NOTES:

- The cost figures represented here are in 1989 dollars. As the amounts set out in the budget are in dollars of the year the expenditure is to be incurred a discounting factor of 7% was used to deflate them. (This is the same factor that was used to inflate the expenditures for budgeting purposes.)
- The allocation percentages were obtained by applying the current service standards set out in Table 2 to the population to be serviced, of 42,620, which is derived in section II.

APPENDIX I
SCHEDULE 1
TABLE 2

DEPARTMENT OF CULTURE AND RECREATION CALCULATION OF CURRENT SERVICE LEVELS		
<i>Facility</i>	<i>Number Currently Available</i>	(i) Current Service Level Persons/Facility
a)Skating Facilities (Rinks)	8	38,395
b)Senior Citizen Centres	3	102,387
c)Therapeutic Pools	2	153,580
d)Recreation Centres	12	25,597
e)Playground Facilities	n/a	\$11,000/park
f)Outdoor Pools	8	38,395
g)Bicycle Paths	n/a	\$1.07/person

NOTES:

- (i)The current service standards were obtained by dividing the current number of facilities by the City population in 1988 of 307,160 persons.

a) SKATING ARENAS

After a survey of the existing skating facilities, it was established that, currently, there is one skating rink available for each 38,395 persons. Accordingly to provide new development with the equivalent service level, 1.11 additional skating rinks will need to be constructed. Therefore of two twin-pad arenas that are planned to be built in the next ten years, 55% of the costs of one, namely the South-East Mountain Arena can be attributed to residential growth. (The remaining portion of the arena construction is assumed to be for the service level improvement of the current population.)

b) SENIOR CITIZEN CENTRES

There are currently three senior citizens centres servicing the city of Hamilton. These are, Main Hess, Ottawa Street, and MacNab Street senior centres. This indicates that the current service level is 1 senior citizen centre for each 102,386 persons. Accordingly, the 42,620 persons living in new development will require 42% of the Mountain Senior Citizens Centre for their use. Thus 42% of the estimated costs of building this centre are assigned to residential growth.

c) THERAPEUTIC HOT POOLS

The department is planning to construct a new therapeutic hot pool in the west central area of the city. The current service standard for therapeutic pools in the city is one pool to 153,580 persons, which applied to the population that will be living in new development, indicates that 28% of the costs of the new pool can be attributed to residential growth.

d) RECREATION COMPLEXES

Presently there is one recreation complex for each 25,597 citizens of Hamilton. (A standard Recreation Centre provides one 25 metre leisure pool, a gymnasium, craft rooms, and a community room.) When this service standard is applied to the 42,620 new persons that will need to be serviced, it is found that they will require the space equivalent to 1.67 recreation complexes. Accordingly 100% of the costs that will be incurred to build the Riverdale Recreation complex and 67% of the costs that will be incurred to build the complex on the south-central mountain, are assigned to growth.

e) PLAYGROUND FACILITIES

The city is committed to providing a base service level of \$5,500 worth of playground equipment for each park. An additional \$5,500 are available to match, dollar for dollar, community investment in playground facilities. Accordingly the figure of \$11,000 per park was used to calculate the servicing costs of new development. As 20 new parks are expected to be built in the next ten years to service new development growth, the costs of providing these parks with the necessary playground equipment have been calculated to be \$220,000.

f) OUTDOOR POOLS

The Walker outdoor pool will be undergoing major restructuring in order to increase its capacity. This will accommodate the growth that is taking place on the south-central mountain. Therefore the entire costs of the project, of \$641,700, are assigned to growth.

g) BICYCLE PATHS

The department will constructing a bicycle route at a total cost of \$990,000. As the cost of the currently available bicycle routes was

APPENDIX I
SCHEDULE 1

\$330,000, the current service level was calculated as being \$1.07 of bicycle path surface per person ($\$330,000/307,160$). This service standard was used to calculate the portion of the costs of the new bicycle route that are assignable to growth. These are \$45,603 or 4.6% of the total costs of the bicycle path project. ($\$1.07 \times 42,620$.)

DEPARTMENT OF PUBLIC WORKS - PARKS DIVISION

The Department of Public Works - Parks Division is responsible for landscaping raw parkland obtained from the 5% land dedication levy. It is also responsible for providing outdoor sports facilities located on city parkland.

In calculating the capital costs that will be incurred by this department, to provide new development with adequate parkland and park facilities, the following procedures were followed:

- Current service level standards were obtained by taking an inventory of currently available facilities and dividing the resulting figures by the current City population.
- These service level standards were then applied to the estimated figure for new population growth in currently unserved areas, to obtain the facilities that will need to be created to service new development.

Once the above exercise was completed, the facilities that will need to be constructed were costed, using 1989 dollars. This yielded a total expenditure figure for constructing future park facilities.

A summary of the ten year capital expenditure projections is presented in Table 1, together with an allocation of an appropriate portion of costs to growth-related residential development. For each type of facility, a separate discussion follows the table, analyzing the current service levels, and the bases for apportioning costs due to growth.

DEPARTMENT OF PUBLIC WORKS – PARKS DIVISION						
CALCULATION OF GROWTH RELATED PORTION OF CAPITAL COSTS						
Project	(i) Amount	Residential			Commercial/Industrial	
		(ii) Growth Relate	\$ Growth Related	Cost Per Capita	Growth Relate	\$ Growth Relate Cost Per Square Foot
a)Baseball Diamonds	\$400,000.00	84.00%	\$336,000.00	\$7.88		
b)Sport Fields	\$490,000.00	54.00%	\$264,600.00	\$6.21		
c)T.B. McQuesten Park Development	\$8,000,000.00	24.00%	\$1,440,000.00	\$33.79		
d)Baseball Stadium – William Connel Park	\$5,000,000.00	5.00%	\$250,000.00	\$5.87		
e)Running Track – William Schewenger Park	\$500,000.00	28.00%	\$140,000.00	\$3.28		
f)Park Development						
i)Randall Park	\$90,600.00		\$90,600.00	\$2.13		
ii)Kerringham Park	\$302,000.00		\$302,000.00	\$7.09		
iii)Jerome Park	\$181,200.00		\$181,200.00	\$4.25		
vi)Barnstown Park	\$90,600.00		\$90,600.00	\$2.13		
v)Kennedy West Park	\$241,600.00		\$241,600.00	\$5.67		
vi)Indian Burial Grounds Park	\$181,200.00		\$181,200.00	\$4.25		
vii)Crerar Neighbourhood Park	\$140,732.00		\$140,732.00	\$3.30		
viii)Falkirk West Park	\$181,200.00		\$181,200.00	\$4.25		
ix)Alison Park	\$68,554.00		\$68,554.00	\$1.61		
x)Broughton West Park	\$135,900.00		\$135,900.00	\$3.19		
xi)William Connel Park	\$634,200.00		\$634,200.00	\$14.88		
xii)William Schewenger Park	\$302,000.00		\$302,000.00	\$7.09		
xiii)Billy Sherring Park	\$347,300.00		\$347,300.00	\$8.15		
xiv)Turner Farm Park	\$1,494,900.00		\$1,494,900.00	\$35.08		
xv)Mohawk Sports Park	\$1,620,000.00		\$1,620,000.00	\$38.01		
Subtotal	\$6,011,986.00	68.00%	\$4,088,150.48	\$95.92		
Total	\$18,401,986.00	35.42%	\$6,518,750.48	\$152.95		

NOTES:

i)The cost figures represented here are in 1989 dollars.

ii)The allocation percentages were obtained by applying the current service standards set out in Table 2, to the population to be serviced, of 42,620, which is derived in section II.

APPENDIX I
SCHEDULE 2
TABLE 2

DEPARTMENT OF PUBLIC WORKS - PARKS DIVISION		
CALCULATION OF CURRENT SERVICE LEVELS		
Facility	Number Currently Available	(i) Current Service Level Persons/Facility
Baseball Diamonds	8	38,395
Sports Fields	3	102,387
Baseball Stadiums	(ii) 1	123 persons/seat
Running Track	2	153,580
Parks	1,436 acres	4.68ac/1,000pers

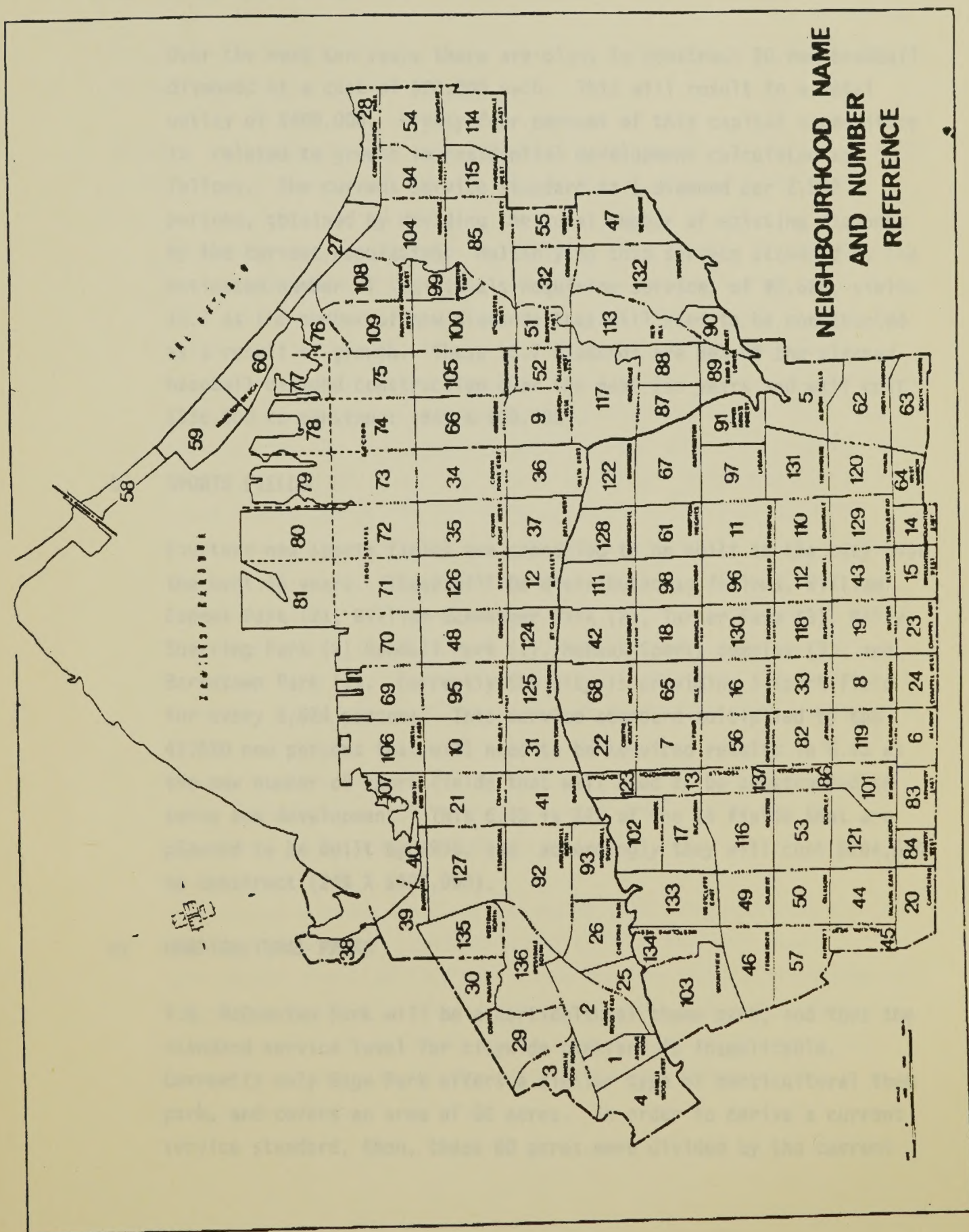
NOTES:

- (i) The current service standards were obtained by dividing the current number of facilities by the City population in 1988 of 307,160 persons.
- (ii) The present stadium has a seating capacity of 2,500 seats.

APPENDIX I
SCHEDULE 2
TABLE 3

DEPARTMENT OF PUBLIC WORKS - PARKS DIVISION	
PARK DEVELOPMENT COSTS PER ACRE	
Grading and Seeding	\$6,000.00
Hard Surfaces (Pathways, Sitting Areas)	\$6,000.00
Courts (Basketball, Hockey, Tennis, Bocci)	\$4,000.00
Fencing	\$1,200.00
Landscaping	\$7,000.00
Benches	\$1,000.00
Lighting	\$3,000.00
Under Drainage	\$2,000.00
Total	\$30,200.00

Source: Department of Public Works - Parks Division



a) BASEBALL DIAMONDS

Over the next ten years there are plans to construct 20 new baseball diamonds at a cost of \$20,000 each. This will result in a total outlay of \$400,000. Eighty-four percent of this capital expenditure is related to growth in residential development calculated as follows. The current service standard is 1 diamond per 2,552 persons, obtained by dividing the total number of existing diamonds by the current population. Multiplying this service standard by the estimated number of individuals requiring service, of 42,620, yields 16.7 as the number of new diamonds that will need to be constructed as a result of growth. These 16.7 diamonds are 84% of the planned baseball diamond construction over the next ten years and will cost \$336,000 to construct (84% X 400,000).

b) SPORTS FIELDS

Fourteen new sports fields are scheduled to be built in the city over the next 10 years. These will be distributed as follows, William Connel Park (2), William Schwenger Park (2), Turner Farm (3), Billy Sherring Park (2) Randall Park (1), Mohawk Sports complex (3), and Barnstown Park (1). Currently the city is providing 1 sport field for every 6,624 persons. This service standard multiplied by the 42,620 new persons that will need to be serviced results in 6.43 as the new number of sport fields that will need to be constructed to serve new development. This 6.43 is 24% of the 14 fields that are planned to be built by 1998, and accordingly they will cost \$264,640 to construct (24% X \$400,000).

c) HORTICULTURAL PARKS

T.B. McQuestan Park will be a horticultural theme park, and thus the standard service level for citywide parkland is inapplicable. Currently only Gage Park offers a similar type of horticultural theme park, and covers an area of 60 acres. In order to derive a current service standard, then, these 60 acres were divided by the current

HAMILTON PUBLIC LIBRARY

The City of Hamilton Public Library Board is responsible for administering the City's library system.

In order to arrive at the costs that the Library Board will incur in order to service new residential growth, the following steps were followed.

- The current service standard, regarding floor space, for the area known as the Upper City was estimated. (The service level for this area - as opposed to the entire city - was used in establishing the current service level, as it is assumed that all new residential development growth will take place in this area.) The calculation of the current service standards first entailed taking the floor space inventory of the four branches servicing the Upper City, namely, the Terryberry, Sherwood and Concession branches. Subsequently the floor space area obtained (35,740 which includes an addition of 9,000 square feet of floor space at the Terryberry branch) was divided by the population serviced by these branches (102,100) to obtain the service standard of .35 square feet per person. (The current Upper City population is 120,600, which indicates that 18,500 persons currently live outside the one mile radius of any of the Upper City branches. Generally branches draw most users from within a one mile radius. Therefore, funds have been allocated in the 1989 Capital Budget for the construction of additional library space to service these individuals. They are not covered here as they are not considered to be growth related.)
- The current service level of .35 square feet per person was applied to the estimated new population that will be residing in new development areas, (42,620) to obtain the new library space that will need to be created to service this population. This calculation indicates that about 10,000 square feet of new library space are needed to service the population that will be living in new development areas.

- An analysis of the spatial distribution of new development was made, as a result of which it was decided that the new development areas will best be served by two new library branches of about 5,000 square feet each.
- The number of books available per person was calculated by dividing the total number of volumes in the Public Library system (646,521) by the current City population (307,160). This indicates that currently there are 2.1 volumes available per person in the City of Hamilton.
- To calculate the size of the book collections that will be necessary to service the population living in new development areas, the current service level (2.1 volumes/person) was applied to the 42,620 persons who are estimated to be occupying new development. This indicates that 89,502 volumes will be required to service these individuals.
- The growth related portion of the new book mobile the library is acquiring was calculated.

Once it was determined that two new library branches will need to be constructed to service the population living in new development areas, the construction costs of these two branches were estimated, by using current building cost quotes and historical experience. These costs, and the details of their calculation, are presented in Table 1 and the discussion that follows.

HAMILTON PUBLIC LIBRARY						
CALCULATION OF GROWTH RELATED PORTION OF CAPITAL COSTS (iii)						
Project	Residential (i)			Commercial/Industrial (ii)		
	Amount	% Growth Related	\$ Growth Related	% Growth Related	\$ Growth Related	Cost Per Square Foot
a) Library Branches	\$4,482,379.48	100.00%	\$4,482,379.48	0.00%	\$0.00	\$0.00
b) Bookmobile	\$135,000.00	28.00%	\$37,800.00	0.00%	\$0.00	\$0.00
Total	\$4,617,379.48	97.89%	\$4,520,179.48	0.00%	\$0.00	\$0.00

NOTES:

i) The allocation percentages were obtained by applying the current service standards set out in Table 2, to the population to be serviced, of 42,620, which is derived in section I.

APPENDIX I
SCHEDULE 3
TABLE 2

HAMILTON PUBLIC LIBRARY CALCULATION OF CURRENT SERVICE LEVELS		
	Service Total	Service Level
a) Library Space	35,740sq.ft.	.35sq.ft./pers.
b) Bookmobile	2	1 b.m./153580 pers.

Notes:

i) For of an explanation derivation of the service total see preceeding discussson.

Obtained by applying the current city population of 307,160.

- a) As previously mentioned, it was determined that 2 new libraries of approximately 7,459 square feet would have to be constructed, in order to provide new development with the same level of service currently extended to the rest of Hamilton. The costs of constructing these two libraries were estimated to be \$2,050,000, calculated as follows:
- Two sites measuring 20,000 square feet each, costed at \$25.00 per square foot, for a total of \$1,000,000.
 - Building costs of \$105 per square foot multiplied by 7,459 square feet per branch, for a total cost, for two branches, of \$1,566,390.
 - Furniture & fixture costs of \$25 per square foot multiplied by 7,459 square feet per branch, for a total cost for two branches of \$372,975.
 - Materials cost based on a total of 89,592 books at \$17.24 per volume for a total of \$1,543,014.48.
 - Total cost for the two branches, \$4,482,379.48.
- b) The current service standard of one book mobile per 153,580 persons was applied to the population that will be living in new development areas, 42,620 to obtain the growth related portion of the costs of the new book mobile, 28%. As the cost of acquiring the new book mobile is estimated to be \$135,000 the growth related costs are calculated to be \$37,800.

FIRE DEPARTMENT

The Fire Department is responsible for providing the City of Hamilton with fire protection services.

The City's fire department is committed to being able to respond to an emergency call within 3.5 minutes. Accordingly this is the service standard that was used to establish the capital costs the department will incur in order to adequately service new residential development.

After an in depth analysis of future development patterns, it was established that the department will incur \$4,600,000 in order to maintain their current service level throughout the city. As the fire department services both residential and commercial/industrial development, the total costs of fire protection services have been apportioned between these two categories. Based upon historical evidence, it was determined that 80% of the costs should be borne by residential development and the other 20% by commercial/industrial development.

For a detailed discussion of the calculations performed, see Table 1.

FIRE DEPARTMENT CALCULATION OF GROWTH RELATED PORTION OF CAPITAL COSTS									
Project	Amount	Residential			Commercial/Industrial			Cost Per Square Foot	Cost Per Acre
		% Growth Related	\$ Growth Related	Cost Per Capita	% Growth Related	\$ Growth Related	Cost Per Square Foot		
a) Fire Stations									
Fire Station - Upper Wellington near Stone Church	\$1,400,000.00	80.00%	\$1,120,000.00	\$26.28	20.00%	\$280,000.00	\$0.03		\$653.79
Fire Station - Upper Sherman and Fennel Avenue area	\$3,200,000.00	80.00%	\$2,560,000.00	\$60.07	20.00%	\$640,000.00	\$0.08		\$1,743.44
Total	\$4,600,000.00	80.00%	\$3,680,000.00	\$86.34	20.00%	\$920,000.00	\$0.11		\$2,397.23

NOTES:

i) The cost figures represented here are in 1989 dollars. As the amounts set out in the expenditure is to be incurred a discounting factor of 7% was used to deflate them.
(This is the same factor that was used to inflate the expenditures for budgeting purposes.)

ii) The allocation percentages were obtained by applying the current service standards set out in Table 2, to the population to the population to be serviced, of 42,620, which is driven in section

iii) The per acre costs were obtained by dividing the dollar amount assigned to commercial/industrial growth that are estimated to be created in Hamilton, 6,279,590 to which a coverage ratio of 50% is then applied along with an equalization factor of 1.31. (See appendix III)

iv) The per acre costs were obtained by multiplying the costs per square foot costs by 43,568.

Residential and commercial/industrial growth has been and continues to take place in the mountain area of the City. Realignment of emergency fire protection services in this area has been in progress for several years. The following two projects remain before finalization of this program.

- a) The south-central portion of the City is experiencing tremendous growth. As presently there is no existing fire station that can adequately service this area within the 3.5 minute prescribed response time, a new station is to be built at Upper Wellington Street Near Stone Church. Therefore the total capital cost of constructing the fire station is assigned to new residential development.
- b) Effective distribution of emergency fire protection services across the mountain will require the amalgamation of two existing stations and the relocation of the resources housed therein, to a station that will be built at Upper Sherman and Fennel. The entire capital costs of constructing the new fire station are attributable to growth.

The total cost figure was then divided by the average number of units per neighborhood. This provided a per capita cost. The average population was obtained by multiplying the average number of units per neighborhood (1,200), by the average density per unit (1.7), which was derived in section 1. (See Table 1.)

The details of these calculations are presented in Tables 1 and 2 and the discussion that follows.

DEPARTMENT OF ENGINEERING

The City's Engineering Department is responsible for providing certain portions of road and street lighting costs not provided for by the Region or developers.

The following methodology was used to establish the capital costs that will have to be incurred by the Engineering Department, in order to adequately service new development areas.

- An inventory was made of the services that the city is responsible for providing to a planning unit known as a neighbourhood.
- Once these services were established, a service level was obtained by taking the average service level of 8 existing neighbourhoods. (See Table 1.)
- This service level was then multiplied by the latest available costs of these services to obtain the cost of providing these services.
- The total cost figure was then divided by the average population within a neighbourhood. This provided a per capita cost. The average population was obtained by multiplying the average number of units per neighbourhood (1,200), by the average occupancy per unit (3.2), which was derived in section I. (See Table 2.)

The details of these calculations are presented in Tables 1 and 2 and the discussion that follows.

APPENDIX I
SCHEDULE 5

- a) The City is responsible for constructing the road surface abutting school board property. However, it recovers the cost of doing so from the school board. Therefore the City's net cost is zero.
- b) The road surface abutting parkland is constructed by the City, at a cost of \$958.00 per metre. As the average length installed is 390 metres, the total City cost is calculated to be \$315,182.00
- c) Where parkland abuts residential development, the City is responsible for constructing fencing at a cost of \$45.00 per metre. As the average length installed is 438 metres, the total City cost is calculated to be \$19,710.00
- d) The City is responsible for the widening of neighbourhood stub streets as well as putting in deeper asphalt on the central neighbourhood road, to allow for the introduction of public transportation into the neighbourhood. As the average length installed is 2,338 metres, the total City cost is calculated to be \$140,280.00
- e) Along the perimeter of a neighbourhood, the city is required to provide street lighting at a cost of \$30.00 per metre. As the standard road length covered is 1,900 metres, the total City cost is calculated to be \$57,000.00.
- f) The City constructs approximately half of the stub streets within a neighbourhood at a cost of \$1,208.00 per square metre. As the standard length installed is 300 metres, the total City cost is calculated to be \$362,400.00.

The same methodology was used in calculating the commercial industrial levy. However, in this case, the City costs were allocated to development on a per square foot basis as opposed to a per capita basis. Thus the costs of providing each service were divided by the standard area of a commercial industrial park of 9,606,870 square feet. In this case however the cost of constructing park frontage - item b), and flankage - item c), and school frontage - item a) were excluded, as they are inapplicable.

APPENDIX I
SCHEDULE 5
TABLE 1

DEPARTMENT OF ENGINEERING						
CALCULATION OF GROWTH RELATED PORTION OF CAPITAL COSTS						
Item	Cost Per Metre	Average Length in Metres	City Cost	(i)		(iii) Per Acre Cost
				Per Capita Cost	Per Square Foot Cost	
a) School Frontage	\$0.00	390	\$0.00	\$0.00	N/A	N/A
b) Park Frontage	\$958.00	329	\$315,182.00	\$82.08	N/A	N/A
c) Park Flankage (Fencing)	\$45.00	438	\$19,710.00	\$5.13	N/A	N/A
d) Oversizing of Roads	\$60.00	2,338	\$140,280.00	\$36.53	\$0.02	\$485.84
e) Adjacent Street Lighting	\$30.00	1,900	\$57,000.00	\$14.84	\$0.01	\$197.41
f) Stub Streets	\$1,208.00	300	\$362,400.00	\$94.38	\$0.06	\$1,255.11
Total	N/A	N/A	\$894,572.00	\$232.96	\$0.09	\$1,938.36

NOTES:

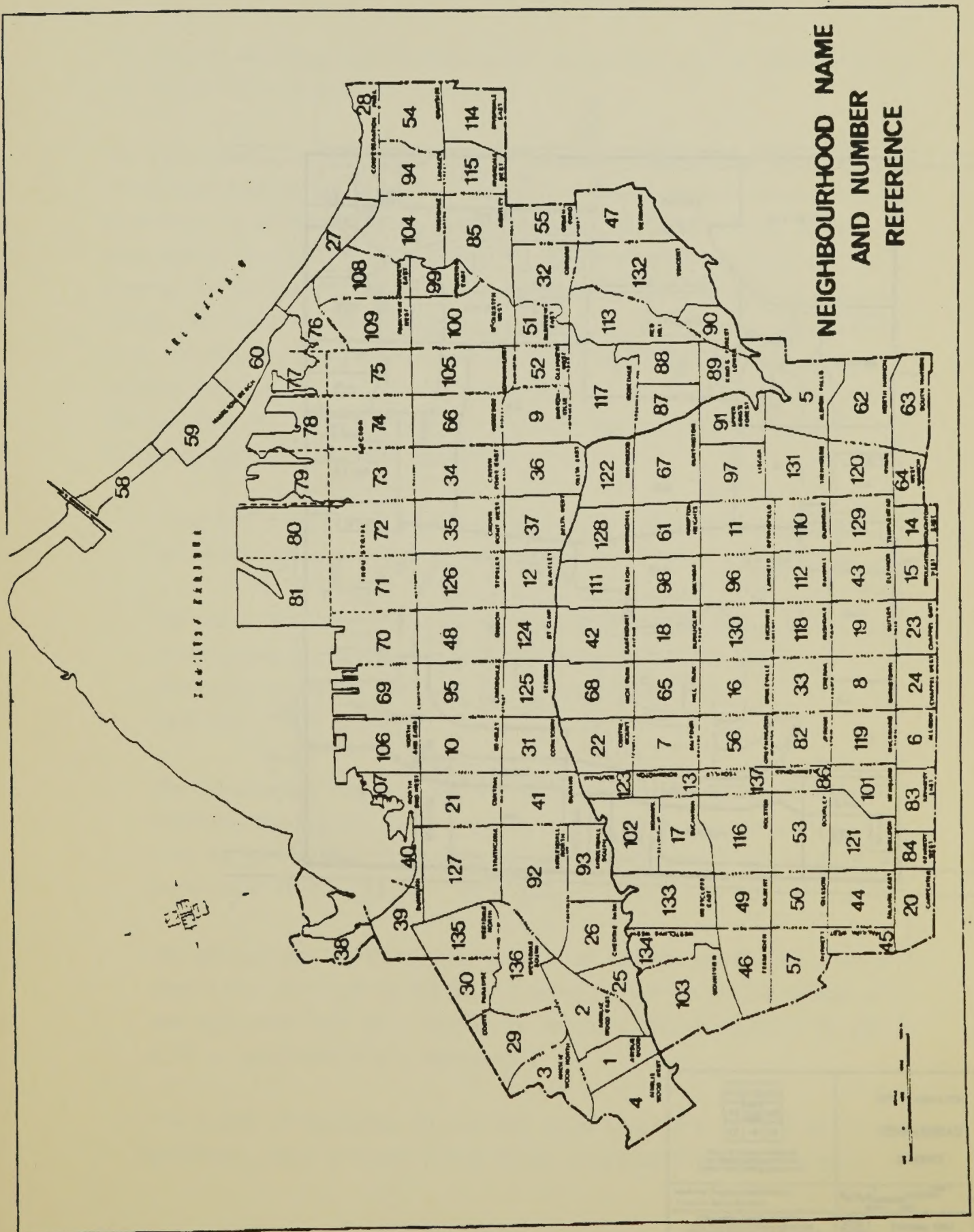
- Obtained by dividing the figures in the column entitled City Cost, by the average neighbourhood population of 3,840. The average population was calculated by multiplying the average number of housing units per neighbourhood, by the average occupancy level obtained in section I.
- Obtained by dividing the figures in the column entitled City Cost, by the average industrial block area of 6,292,500 square feet (area of an industrial park, 9,606,870 sq. ft. multiplied by a coverage ratio of 50% and then multiplied by the equalization factor of 1.31).
- Obtained by multiplying the per square foot cost by 43,586 and the assumed 50% coverage ratio.

APPENDIX I
SCHEDULE 5
TABLE 2

DEPARTMENT OF ENGINEERING CALCULATION OF CURRENT SERVICE LEVELS						
Neighbourhood	School Frontage	Park Frontage	Park Flankage	Oversizing of Roads	(i) Adjacent Street Lighting	(ii) Stub Streets
Jerome	710	370	220	2,600		
Quinndale	400	300	1,280	2,400		
Rushdale	0	250	530	1,500		
Ryckmans	130	550	1,000	2,100		
Templemead	550	200	80	2,700		
Eleanor	200	300	120	3,000		
Budler	730	460	120	2,400		
Barnstown	400	200	150	2,000		
Average	390	329	438	2,338	1,900	300

NOTES:

- i) A standard neighbourhood is 1050 x 850 metres.
- ii) Standard number of stub streets per neighbourhood is eight. The City is responsible for constructing half of these, each measuring 75 metres.



TRAFFIC DEPARTMENT

The City of Hamilton Traffic Department is responsible for administering the City's traffic control system.

The department's major expenditure will be the construction of a new operations centre. This capital expenditure has been necessitated as the department's current quarters are inadequate for the workload it is expected to perform. To compensate for the fact that the City will be growing in the future, which will mean that the department will have to assume the traffic control responsibilities for an expanded geographical area, the new building is planned to be 20% larger than is required by current city needs. To calculate what portion of the 20% oversizing of the building will be used up by growth over the next ten years, the following calculations were performed.

- A survey of the total number of employees currently employed was performed (62).
- The current service level (1 employee/5,035 persons) was calculated by dividing the current population (307,160) by the number of employees currently employed by the department (61).
 $(307,160 / 61 = 1/5,035)$.
- The square feet required by an employee (720) was calculated by dividing the square footage of the new building not designated as oversizing (44,000), by number of employees currently employed by the department (61). $(44,000 / 61 = 720)$.
- The current service level was applied to the new population that will need to be serviced (1/5,035), in order to arrive at the number of new employees that will need to be employed (9). $(1/5,035 \times 42,620 = 8.46$ or approximately 9 employees.)
- The number of employees determined to be necessary to service the population that will be living in new development areas (9) was

multiplied by the square footage required for each employee (720), in order to arrive at the number of square feet of the area designated as oversizing, that will be used up over the next ten years.

$(9 \times 720 = 6,480)$.

As 6,480 square feet are 59% of the total space designated as oversizing .118% (\$254,880) of the total City costs of constructing the new building are assigned to growth. The .118% was obtained by taking the percentage of the building defined as oversizing (20%) and multiplying this by the portion that will be used up in the next ten years (59%).

The cost of building this operations centre is being shared by the City and the Region. The City's portion of the total cost was calculated to be 35% (\$2,160,000). This was based on the ratio of Regional verses City work, based on MMS documentation.

The department will also be required to supply new development areas with traffic signs. To calculate the expenditures that will be involved, the following steps were followed:

- Three typical neighbourhoods were chosen and an average count of stop signs (50), miscellaneous parking signs (50), and street name signs (65) was taken.
- Subsequently these signs were costed in 1989 dollars and a figure of \$13,650 was obtained. The parking signs were costed at \$125 each, for a total of \$6,250. Fifty percent of the parking signs were assumed to be on their own poles and were costed at \$100 each. The other 50% of the stop signs were assumed to be located on multiple use poles and were accordingly costed at \$40 each, resulting in a total cost of \$3,500. The street name signs were costed at \$60 each for a total of \$3,900.

When this \$13,650 is divided by the average population of a neighbourhood of 3,840, a per capita cost of \$3.55. The average neighbourhood population was obtained by multiplying the average number of units per

neighbourhood (1,200) by the average occupancy level (3.2).

The costs for providing signs for commercial/industrial development were determined to be negligible.

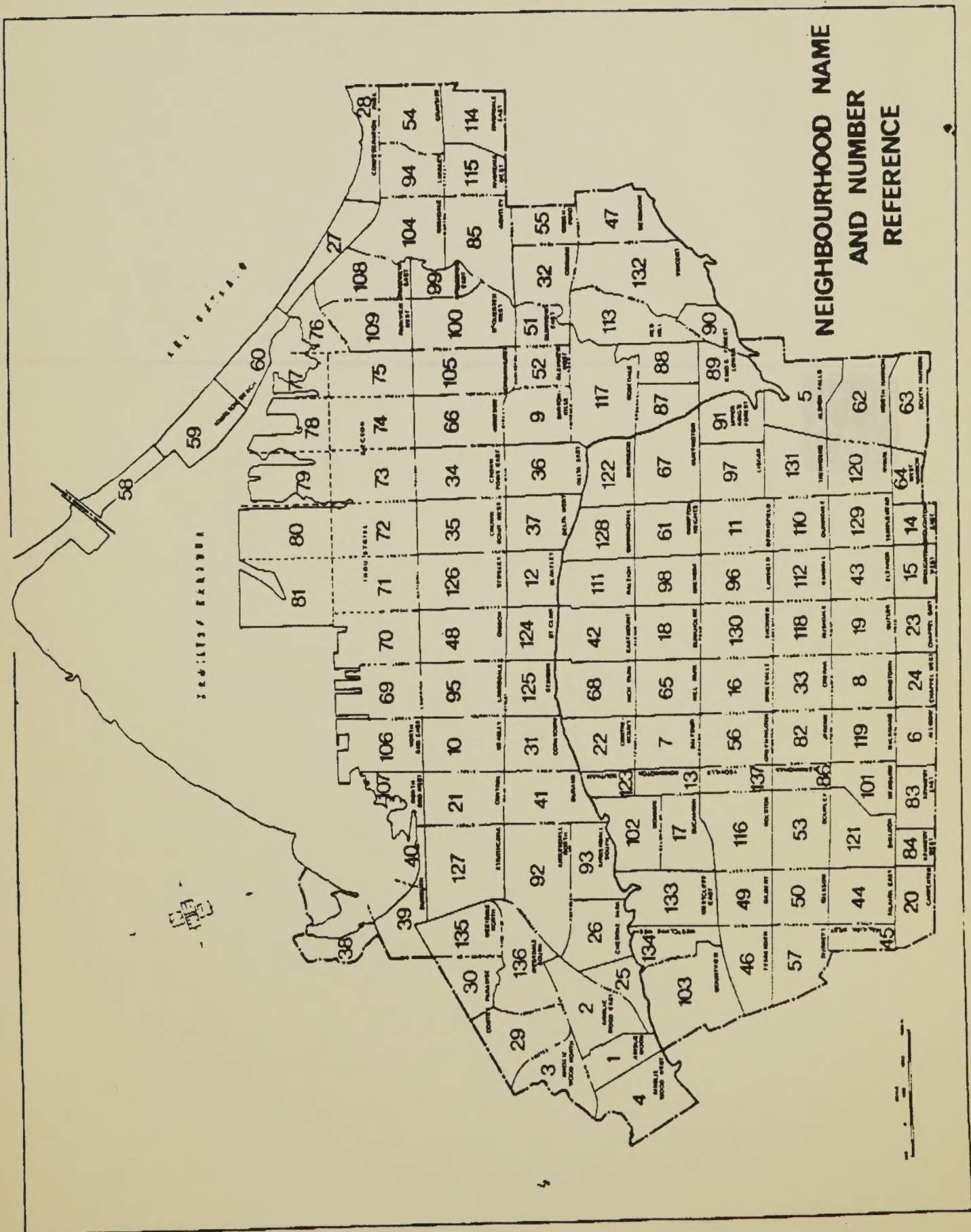
TRAFFIC DEPARTMENT CALCULATION OF GROWTH RELATED PORTION OF CAPITAL COSTS						
Project	(i) Amount	Residential		Commercial/Industrial		
		(ii) % Growth Related	\$ Growth Related	(iii) % Growth Related	\$ Growth Related	Cost per Square Foot
a)Traffic Operations Building	\$2,160,000.00	5.90%	\$127,440.00	5.90%	\$127,440.00	\$337.47
b)Traffic signs	\$151,301.00	100.00%	\$151,301.00	0.00%	0.00%	\$0.00
Total	\$2,311,301.00	12.06%	\$278,741.00	5.51%	\$127,440.00	\$337.47

NOTES:

i)The cost figures represented here are in 1989 dollars. As the amounts set out in the budget are in dollars of the year the expenditure is to be incurred a discounting factor of 7% was used to deflate them. (This is the same factor that was used to inflate the expenditures for budgeting purposes.)

ii)The allocation percentages were obtained by applying the current service standards set out in Table 2, to the population to be serviced, of 42,620, which is derived in section I.

iii)For a discussion of the calculations employed in obtaining the these costs, see the preceding discussion.





**CITY OF HAMILTON
DEBT SUPPORT CAPACITY**

New development will create financial demands on the City of Hamilton to provide additional facilities and services. These costs were analyzed in Appendix I. Development growth will also increase the taxable assessment in the City, which will in turn, increase revenue and partially offset the additional service costs of development. The debt payment capability, from new revenue, is examined below. However, as a basis for that we must first determine the assessment to be associated with growth.

AVERAGE RESIDENTIAL ASSESSMENT PER NEW RESIDENTIAL UNIT IS \$6,900.98

A review of taxable assessment for the years 1985-1988 was undertaken to determine the taxable residential assessment per new residential unit. The results of this analysis, the details of which are presented in Table 1, indicate that the average assessment per new residential unit is \$6,900.98.

RESIDENTIAL ASSESSMENT SUPPORTS 54.46% OF DEBT OUTSTANDING

An analysis of the debt supportable by residential assessment outstanding compared to total weighted taxable assessment was conducted for the period 1985-1988. This involved determining the average proportion of total assessment attributable to residential units and multiplying this by the average debt outstanding during this period. This indicated that on average, residential assessment supports 54.46% of debt outstanding.

DEBT SUPPORTED BY RESIDENTIAL ASSESSMENT TO RESIDENTIAL ASSESSMENT RATIO IS 6.69%

The debt figure supportable by residential assessment was divided by the average residential assessment to obtain a debt supported by residential assessment to residential assessment ratio of 6.69%.

DEBT SUPPORTED BY A NEW RESIDENT IS \$122.71

The debt supported by residential assessment to residential assessment ratio was applied to the average weighted taxable assessment of \$5,865.83 (\$6,900.98 X .85), resulting in a debt support of \$392.68 per new residential unit. Based on the estimated population growth between 1986

APPENDIX II

and 1990 of 42,620 persons and the estimated number of new housing units, of 13,450, the average occupancy of a new unit is 3.2 persons per unit. When this 3.2 persons per unit is divided into the debt capacity of \$392.68 per new unit, the result is a debt capacity per new resident of \$122.71 per capita.

83.50% OR \$102.46 OF THE PER CAPITA DEBT SUPPORT IS NEEDED TO PAY FOR NON-GROWTH REPLACEMENT COST REQUIREMENTS

A portion of the debt support capability for new residents will be needed to finance replacement and upgrading costs incurred after one becomes a resident. This portion was determined by dividing the total ten year non-growth related capital expenditures (\$178,422,115) by the total capital expenditures budgeted for 1989-1998 (\$233,254,000).

NET DEBT SUPPORT PER CAPITA IS \$20.25

The net debt support per capita was calculated by subtracting the replacement cost portion (\$102.46) from the \$122.71 debt support per capita. This yielded \$20.25 as the net debt supportable by a new resident.

APPENDIX II
TABLE 1

CITY OF HAMILTON DEBT SUPPORT		
A. Assessment Per New Unit	See Table 2.	\$6,900.98
B. Weighted Assessment Per New Unit (85%)	85% X A	\$5,865.83
C. Estimated New Units (1989-1993)	See Section 1.	1,345
D. Estimated Population Change (1989-1998)	See Section 1.	42,620
E. Population Per New Unit (1989-1993)	D/C	3.2
F. Average Residential Assessment	See Table 3.	\$483,133,157.25
G. Average Debt Supported by Residential Assessment	See Table 4.	\$27,531,576.45
H. Estimated Weighted Residential Assessment	85% X F	\$410,663,183.66
I. Estimated Residential Debt to Weighted Residential Assessment Ratio	G/H	6.69%
J. Debt Support Per New Unit	B X I	\$392.68
K. Debt Support Per Capita	J/E	\$122.71
L. Non Growth Related Capital Costs Per Capita as a Percentage of Budgeted Expenditures 1989-1998	See Table 5.	83.50%
M. Non Growth Related Portion of the Debt Support Per Capita	L X K	\$102.46
N. Debt Credit Per Capita	K - M	\$20.25

APPENDIX II
TABLE 2

CALCULATION OF AVERAGE ASSESSMENT PER NEW RESIDENTIAL UNIT					
Year	Residential Units	Year Over Year Change in Units	(ii)		
			(i) Assessment	Year Over Year Change in Assessment	Average Assessment Per New Unit
1985	117,656		\$469,071,185.00		
1986	118,935	1,279	\$477,075,225.00	\$8,004,040.00	\$6,258.05
1987	120,374	1,439	\$487,597,557.00	\$10,522,332.00	\$7,312.25
1988	121,943	1,569	\$498,788,662.00	\$11,191,105.00	\$7,132.64
Average	N/A	1,429	N/A	\$9,905,825.67	\$6,900.98

Source: Assessment Rolls, 1985-1988.

Notes:

- (i) Excludes farmland vacant land, and other, which are also classified as residential assessment
- (ii) Year Over Year Change in Assessment divided by the Year Over Year Change in Units.

APPENDIX II
TABLE 3

RESIDENTIAL ASSESSMENT AS PERCENTAGE OF TOTAL					
Year	(i)		(ii)		
	Residential Assessment	Percentage Residential	Commercial Assessment	Percentage Commercial	Total Assessment
1985	\$469,071,185.00	54.31%	\$394,692,148.00	45.69%	\$863,763,333.00
1986	\$477,075,225.00	54.37%	\$400,401,139.00	45.63%	\$877,476,364.00
1987	\$487,597,557.00	54.70%	\$403,807,138.00	45.30%	\$891,404,695.00
1988	\$498,788,662.00	54.47%	\$416,869,072.00	45.53%	\$915,657,734.00

Source: Assessment Rolls, 1985-1988.

Notes:

- (i) Residential Assessment divided by Total Assessment
- (ii) Commercial Assessment divided by Total Assessment

APPENDIX II
TABLE 4

CALCULATION OF DEBT SUPPORTED BY RESIDENTIAL ASSESSMENT					
Year	(i)	(i)	(ii)	(iii)	(iv)
	Debt Outstanding	Self-Liquidating Debt	Debt Supported by Assessment	Debt Supported by Residential Assessment	% of Debt Supported by Residential Assessment
1985	\$47,521,896.28	(\$1,822,608.30)	\$45,699,287.98	\$24,819,283.30	54.31%
1986	\$54,366,940.76	(\$3,563,706.94)	\$50,803,233.82	\$27,621,718.23	54.37%
1987	\$49,040,494.12	(\$3,396,906.68)	\$45,643,587.44	\$24,967,042.33	54.70%
1988	\$68,942,843.97	(\$8,876,271.68)	\$60,066,572.29	\$32,718,261.93	54.47%
Average	\$54,968,043.78	(\$4,414,873.40)	\$50,553,170.38	\$27,531,576.45	54.46%

Notes:

- (i)Source: City of Hamilton Debt Book
- (ii)Debt Outstanding minus Self Liquidating Debt
- (iii)% of Debt Supported by Residential Assessment times Debt Supported by Assessment
- (iv)See Table 3.

APPENDIX II
TABLE 5

CALCULATION OF TOTAL GROWTH RELATED CAPITAL COST			
Department	Residential	Comm/Indst	Total
Culture And Recreation	\$11,938,126.10	n/a	\$11,938,126.10
Public Works - Parks Division	\$6,518,750.48	n/a	\$6,518,750.48
Public Library	\$4,520,179.48	n/a	\$4,520,179.48
Fire	\$3,680,000.00	\$920,000.00	\$4,600,000.00
Engineering	\$9,928,755.20	\$565,263.00	\$10,494,018.20
Traffic	\$278,741.00	\$127,440.00	\$406,181.00
Total	\$36,864,552.26	\$1,612,703.00	\$38,477,255.26



APPENDIX III
TABLE 1

DERIVATION OF OCCUPANCY LEVELS USED IN THE CALCULATION OF THE DEVELOPMENT CHARGE			
Unit Type	WEIGHTED AVERAGE (GOURLEY, FESSENDEN)		
	Dwellings	Population	Occupancy Level
Single, Semi-detached, and Row Dwellings	1,658	5,638	3.4

FESSENDEN					
Apartment Type	Dwellings	Actual Population	Actual Occupancy Level	Regional Occupancy Level	Estimated Population
Three Bedroom	31	n/a	n/a	2.4	74
Two Bedroom	92	n/a	n/a	2.4	221
One Bedroom	133	n/a	n/a	1.3	173
Bachelor	2	n/a	n/a	1.3	3
Totals	258	457	1.8	1.8	471

Source: City of Hamilton and Region of Hamilton-Wentworth Planning Departments



CITY OF HAMILTON
CALCULATION OF COMMERCIAL/INDUSTRIAL LOT LEVY

The capital costs that will be incurred by the City of Hamilton to service new commercial/industrial development was allocated on the basis of the square footage of commercial/industrial space anticipated to be created in the City over the period 1989-1998. This square footage was obtained in the following manner.

A historical analysis was made of the commercial and industrial building permits issued in Hamilton over the five year period 1984-89. The records that are kept by the Building Department only list the dollar value of the permits issued and thus it was necessary to convert these statistics into square feet. The conversion factors used, are listed in Table 1.

Through this analysis it was established that on average, 627,959 square feet of commercial/industrial space are created in Hamilton, each year. As the period examined, covers years of high and low building activity, it was thought to be a good indicator of the building activity that will take place in Hamilton over the next ten years. Multiplying this 627,959 square feet by the ten years that our projection covers, indicates that 6,279,590 square feet of additional commercial/industrial space will be created in Hamilton by 1998.

In using the square footage of office space to be created in the City over the next ten years, several adjustments were made. An equalization factor was derived (see Tables 2 and 3) which adjusts for the fact that in cases where the building area is greater than 50% of the lot area, the City will be collecting a square foot surcharge in addition to the minimum per acre levy. This equalization factor is computed to be 1.31 and is applied to the projection of square feet of office space projected to be built, in order to obtain a number upon which to base the per square foot non-residential growth-related costs. (The calculations of the equalization factor is as follows: equivalent lot area divided by lot area for industrial development weighted by 36% - the portion of industrial building activity verses commercial building activity over the past five

years plus equivalent lot area divided by lot area for commercial development, weighted by 64% - the portion of commercial building activity verses industrial building activity over the past five years). This will ensure that the amount levied does not exceed the costs intended to be recovered.

To obtain the minimum per acre cost a 50% coverage ratio of building to lot area was assumed and applied to any square foot costs. This per acre cost is the minimum charge payable and is applied to all commercial/industrial development.

A. FIRE DEPARTMENT

The per acre cost for the services provided by the Fire Department to commercial/industrial development is calculated to be \$2,397.23 per acre with an additional \$0.11 per asquare foot for the building area in excess of 50% of lot area. See Appendix I, Schedule 4 for details of all calculations.

B. ENGINEERING DEPARTMENT

The per acre cost for the services provided by the Engineering department to commercial industrial development is calculated to be \$1,938.36 per acre with an additional \$.09 for each square foot of building area exceeding 50% coverage. For detailed calculations see Appendix I, Schedule 5.

C. TRAFFIC DEPARTMENT

The per acre costs for the services provided to commercial/industrial development by the Traffic Department is calculated to be \$337.47 per acre with an additional \$0.02 per square foot of building area in excess of 50% of the lot area. Appendix I, Schedule 6 presents detailed calculations of these costs.

APPENDIX IV
TABLE 1

YEARLY SQUARE FOOTAGE OF COMMERCIAL INDUSTRIAL SPACE CREATED						
Year	Value of Commercial Building Permits	Value of Commercial Building Permits	Value of Comm'l/Indstl Building Permits	Value per Square Foot	Comm'l/Indstl Sq. Ft. Created	
1984	\$8,837,600.00	\$4,499,676.00	\$13,337,276.00	\$35.00	381,065	
1985	\$5,129,200.00	\$11,606,107.00	\$16,735,307.00	\$37.00	452,306	
1986	\$18,979,377.00	\$6,349,895.00	\$25,329,272.00	\$40.00	633,232	
1987	\$32,030,103.00	\$8,380,090.00	\$40,410,193.00	\$42.00	962,147	
1988	\$17,774,316.00	\$14,222,818.00	\$31,997,134.00	\$45.00	711,047	
Average	N/A	N/A	N/A	N/A	627,959	

Source: City of Hamilton, Building Department

APPENDIX IV
TABLE 2

INDUSTRIAL COVERAGE RATIO						
Address	Building Area Sq. Feet	Lot Area Sq. Feet	Coverage Ratio	Building Area Acres	Lot Area Acres	Equivalent Lot Area Acres
43 Bigwin	59,816	31,420	190.37%	1.32	0.72	1.38
109 Lancing	10,344	66,834	15.48%	0.23	1.53	1.53
255 Lancing	6,103	74,153	8.23%	0.13	1.70	1.70
125 Lancing	11,948	34,283	34.85%	0.26	0.79	0.79
120 Nebo	33,132	88,588	37.40%	0.73	2.03	2.03
70 Unsworth	12,895	113,237	11.39%	0.28	2.60	2.60
105 Hempstead	35,414	77,393	45.76%	0.78	1.78	1.78
76 Herlowe Road	11,238	71,570	15.70%	0.25	1.64	1.64
298 Lake North	8,999	11,550	77.91%	0.20	0.27	0.34
43 Bigwin	5,985	31,334	19.10%	0.13	0.72	0.72
205 Nebo Road	17,330	116,230	14.91%	0.38	2.67	2.67
600 Stone Church East	9,505	31,334	30.33%	0.21	0.72	0.72
230 Pritchard	6,749	15,005	44.98%	0.15	0.34	0.34
236 Pritchard	5,264	15,059	34.95%	0.12	0.35	0.35
1423 Upper Ottawa	20,947	111,386	18.81%	0.46	2.56	2.56
46 Harlowe	7,126	35,629	20.00%	0.16	0.82	0.82
80 Hempstead	4,973	27,674	17.97%	0.11	0.64	0.64
55 Lancing	20,807	46,931	44.33%	0.46	1.08	1.08
98 Bigwin Road	10,516	29,526	35.62%	0.23	0.68	0.68
70 Unsworth	5,070	27,836	18.21%	0.11	0.64	0.64
314 Lake North	6,405	131,256	4.88%	0.14	3.01	3.01
80 Bancroft	7,503	39,149	19.16%	0.17	0.90	0.90
956 Grays Road	11,754	147,908	7.95%	0.26	3.40	3.40
84 Bigwin Road	11,399	32,497	35.08%	0.25	0.75	0.75
Totals	341,219	1,407,781	24.24%	7.52	32.32	33.05

Notes:

- i) Obtained by dividing the building area in square feet by 43,560 to obtain the area in acres.
- ii) Obtained by dividing the lot area in square feet by 43,560 to obtain the area in acres.
- iii) The number in this column was determined in the following way. If the coverage ratio is less than 50% then it is simply the lot area in acres. If, however the coverage ratio is greater than 50% then the following formula is applied: lot area in acres + (building area in acres - .5 x lot area in acres).

APPENDIX IV
TABLE 3

COMMERCIAL COVERAGE RATIO						
Address	Building Area Sq. Feet	Lot Area Sq. Feet	Coverage Ratio	Building Area Acres	Lot Area Acres	Equivalent Lot Area Acres
1405 Upper Ottawa	26,996	86,790	31.11%	0.60	1.99	1.99
21 King Street West	185,173	16,555	1118.53%	4.08	0.38	4.44
163 Centennial Parkway	30,204	45,779	65.98%	0.67	1.05	1.22
799 Barton Street East	20,312	94,390	21.52%	0.45	2.17	2.17
1575 Upper Ottawa	56,823	230,737	24.63%	1.25	5.30	5.30
2411 Barton Street East	5,543	10,549	52.55%	0.12	0.24	0.25
35 Goodrich	20,096	38,621	52.03%	0.44	0.89	0.90
1177 Rymal Road East	5,005	29,687	16.86%	0.11	0.68	0.68
125 Nebo Road	11,970	44,434	26.94%	0.26	1.02	1.02
1110 Fennell East	2,497	13,509	18.49%	0.06	0.31	0.31
1154 Rymal Road East	22,098	90,558	24.40%	0.49	2.08	2.08
132 young Street	2,303	7,685	29.97%	0.05	0.18	0.18
255 York	5,468	15,285	35.77%	0.12	0.35	0.35
25 York Boulevard	516,037	76,069	678.38%	11.38	1.75	12.72
10 Ewen Road	10,226	11,819	86.52%	0.23	0.27	0.37
65 Lancing	8,557	46,996	18.21%	0.19	1.08	1.08
963 Burlington St. East	2,583	17,018	15.18%	0.06	0.39	0.39
627 Queenston Road	21,636	47,738	45.32%	0.48	1.10	1.10
880 Upper Wentworth	16,254	55,456	29.31%	0.36	1.27	1.27
25 Redmond	19,138	65,370	29.28%	0.42	1.50	1.50
987 Rymal Road East	12,594	303,007	4.16%	0.28	6.96	6.96
33 Wellington North	13,078	15,662	83.51%	0.29	0.36	0.48
100 Locke St. S.	7,309	16,286	44.88%	0.16	0.37	0.37
1249 Stone Church Road East	12,400	56,802	21.83%	0.27	1.30	1.30
Totals	1,034,302	1,436,800	71.99%	22.80	32.98	48.43

Notes:

- i) Obtained by dividing the building area in square feet by 43,560 to obtain the area in acres.
- ii) Obtained by dividing the lot area in square feet by 43,560 to obtain the area in acres.
- iii) The number in this column was determined in the following way. If the coverage ratio is less than 50% then it is simply the lot area in acres. If, however the coverage ratio is greater than 50% then the following formula is applied: lot area in acres + (building area in acres - .5 x lot area in acres).

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